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Exanthem Subitum (Roseola Infantum)

A Review of the Literature and Report of Eighty Cases

Teruo Yoshina, M. D.
Hilo, Hawaii

Probably the most common perennial exanthematous disease of infants and children under two years of age in Hawaii is exanthem subitum (roseola infantum).

This disease was first described by Zahorsky [1] in 1913 as a clinical entity under the name of roseola infantum. In 1921 Veeder and Hempelmann [2] gave it the name of exanthem subitum and described the characteristic blood findings.

The most constant features of the disease are irritability and abrupt onset of prodromal fever which lasts for three or four days. The fever drops either by crisis or lysis and is followed by an eruption which fades in twenty-four to forty-eight hours. It is occasionally ushered in by convulsions. Other symptoms such as mild coryza, red throat, diarrhea and vomiting may be present. The blood count usually shows a decrease in the polymorphonuclear leukocytes and relative lymphocytosis. This illness is frequently confused with other exanthematous diseases of childhood or eruptions due to other causes and hence it is of diagnostic importance. Complications are rare.

This is a review of 80 cases of exanthem subitum which were observed in private practice in Hilo during the past five years. 48 cases were observed before the eruption and the remaining 32 after the appearance of rash.

As to racial distribution, there were 71 Japanese, 4 part-Hawaiians, 3 Caucasians, 1 Chinese and 1 Filipino.

A textbook of pediatrics,[3] and most reports, state that exanthem subitum occurs primarily in children under 2½ to 3 years of age. Only a few reports in older children are available, and Cutts,[4] in 1938, reported a case occurring in an adult. The youngest patient was seven weeks old and the oldest was twenty-nine months of age in this series of cases. Infants and small children between five and fourteen months were most susceptible.

Table 1. Age Distribution of 80 Cases of Exanthem Subitum observed in Hilo.

Age (Months)	Number of Cases	Age (Months)	Number of Cases
1	0	16	1
2	2	17	3
3	2	18	0
4	2	19	2
5	5	20	0
6	9	21	2
7	13	22	0
8	2	23	1
9	6	24	0
10	10	25	0
11	3	26	0
12	7	27	0
13	4	28	0
14	4	29	1
15	1	30	0

Boys were affected more than twice as often as the girls, 54 to 26 respectively, or a ratio of 2 to 1. One observer [5] found a ratio of 3 to 2 in favor of boys while another [6] reported an equal distribution between the sexes.

There does not appear to be any seasonal incidence of this disease in Hawaii (Table 2). Others have reported that it was more prevalent during the fall or early spring [6, 7]. Since this disease is not reportable, its prevalence cannot be ascertained accurately. Undoubtedly, most cases are diagnosed as German measles or measles, or not at all.

Table 2. Monthly distribution of Exanthem subitum cases observed in Hilo during, 1938, 1939, 1940, 1941 and number of influenza cases reported to the Hilo Board of Health office from the city of Hilo during 1940.

	Exanthem Subitum 1938	Exanthem Subitum 1939	Exanthem Subitum 1940	Exanthem Subitum 1941	Influenza Cases Reported 1940 †
January	1	1	2	3	0
February	1	1	3	0	0
March	0	1	2	4	0
April	0	0	1	5	0
May	1	0	0	4	1
June	1	0	0	2	0
July	0	0	5	5	0
August	0	1	3	4	0
September	0	2	1	6	1
October	1	1	1	4	235
November	0	0	3	3	171
December	2	0	3	*	12

† These data were furnished by Mr. B. J. McMorrow, Chief Administrative Health Officer, Island of Hawaii.

* Figures for December 1941 are not included.

In many cases there were very few symptoms and signs except fever and irritability. The fact that thirty-two cases were brought in after the eruption appeared substantiates this fact. In most cases parents attributed the illness to "teething" until the rash appeared. Most authors stress the point that in spite of high fever there is a dearth of symptoms and signs to account for the illness and the child does not seem ill. The fever is variable; the highest in this series was 106.8 degree F. rectally. Lucas [8] states that there are neither gastrointestinal symptoms such as vomiting and diarrhea, nor respiratory symptoms, signs of coryza, sore throat or cough. The eleventh edition of Holt's "Diseases of Infancy and Childhood" (1940) mentions that catarrhal symptoms are usually absent. Dickey, in 1936, is the first, to my knowledge, to have stated that numerous other symptoms may be present and the findings in this series are in agreement with his observations and those of Barenberg and Greenspan. Unless this fact is kept in mind the diagnosis of exanthem subitum will be missed on the first visit. Out of the 48 cases which were seen before the eruption, 37 were diagnosed and, in the remaining 11 cases, the diagnosis was not made on the first visit due to the following reasons: 6 of the 11 had an injected throat and 2 of these also had markedly injected buccal mucous membranes with minute red punctate spots where the Koplik's spots are usually found in measles; and 1 had follicular tonsillitis. 3 of these 11 had diarrhea as the chief complaint; one of the 3 had nasopharyngitis for about a week besides the diarrhea, and another was an infant seven weeks of age in whom this disease was not suspected because of the age and the diarrhea. Only one of the 11 had no significant finding to explain the fever and irritability, and a blood examination done a few hours after the onset of the illness showed a total white cell count of 8,200 with 62 per cent polymorphonuclear leukocytes. These symptoms, signs, and the blood count were misleading. Analysis of the 80 cases showed the following symptoms and signs besides the fever, irritability and rash:

1. Convulsions at the onset of illness ..... 2 cases
2. Bulging anterior fontanel ..... 1 case
3. Injected throat ..... 30 cases
   - 6 of these had nasopharyngitis and 2 were coughing.
   - 4 had follicular tonsillitis.
   - Throat cultures in two were pure staphylococcus aureus and in another gram negative bacilli were found.
   - 6 of these 30 had markedly injected buccal mucous membranes, of these 5 had minute red punctate spots.
   - One had aphthous stomatitis lesions and was coughing.
4. Constipation ..... 2 cases
   - Erythrocyte sedimentation time in one was within normal limits.
5. Diarrhea ..... 8 cases
6. Diarrhea and vomiting ..... 1 case
7. Vomiting ..... 2 cases
8. Purulent otitis media ..... 1 case
9. Drowsy facial expression ..... 17 cases
10. Palpable postauricular and occipital glands ..... 35 cases

Veeder and Hempelmann in 1921 found characteristic leukopenia and relative lymphocytosis in their cases. Faber and Dickey in 1927 and Barenberg and Greenspan in 1939 reported that in their cases the relative lymphocytosis was more constant than the reduction in the total white cells. In this series 62 total white cell counts and 59 differential counts were done on 58 patients. The highest white cell count was 21,800 and the lowest 800 per cubic millimeter. There were 19 white cell counts of 7,000 or less while a count of over 7,000 occurred 43 times. Lymphocyte counts of less than 70 per cent were encountered 17 times, while those of over 70 per cent occurred 42 times. Most of the low lymphocyte counts occurred during the first two days of illness. Out of 11 cases in whom the blood was examined on the first day of illness, four, or 36 per cent, had less than 50 per cent lymphocytes, while only one patient out of the fifteen cases studied showed less than 50 per cent on the second day of illness. Only one had 18 per cent lymphocytes after the rash ap-

peared on the fourth day of illness. He had an infected ear canal and was afebrile. From the second day onward the lymphocytes were predominating (Table 3). Others[6] have reported

Table 3. 62 total white cell counts and 59 differential counts on 58 cases of exanthem subitum.

TYPE OF BLOOD COUNT	DAY OF ILLNESS WHEN BLOOD COUNT WAS DONE					
	1st	2nd	3rd	4th	5th	6th
Total white cell count below 7,000 per cu. mm.	2	4	5	5	3	0
Total white cell count above 7,000 per cu. mm.	9	12	7	8	6	1
Lymphocytes 0 to 40%	2	1	0	2	0	0
Lymphocytes 41 to 50%	2	0	0	0	0	0
Lymphocytes 51 to 60%	1	1	1	0	0	0
Lymphocytes 61 to 70%	1	4	0	2	0	0
Lymphocytes 71 to 80%	4	6	5	3	4	0
Lymphocytes 81 to 90%	1	2	5	5	3	0
Lymphocytes 91 to 100%	0	0	1	0	2	1

that in spite of other infection lymphocytosis is the rule. Since there is granulopenia and relative lymphocytosis, the chamber differential count of the white blood cells was used exclusively. A smear examination as a check on the chamber differential count showed that in this disease detailed smear examination is not necessary in establishing the diagnosis. That thirty-seven cases were diagnosed before the eruption with the aid of this method of blood examination is sufficient proof of the reliability of this method.

However, there are occasional cases with typical symptoms and signs and blood picture of exanthem subitum without rash at the end of the febrile period. There was one such case. A child was seen on the third day of illness with a fever of 101.5 F. On physical examination he appeared drowsy and only a slightly injected throat and moderately palpable occipital glands were found. White cell count was 10,400 with 80 per cent lymphocytes. Two days later he was afebrile but there was no eruption. Dickey recommends that the patient be observed at least forty-eight hours after the fall in temperature when this disease is suspected. Barenberg and Greenspan reported one such case and considered this an abortive or modified form of roseola infantum. Zahorsky suggests the name of "roseola sine eruptione".[10]

Most observers reported that the fever usually drops by crisis. However, an observation made in an institution where the temperature was recorded every four hours showed that the number of cases were equally divided between the two groups where the fever dropped by crisis, and by lysis. In office practice this cannot be determined accurately, but in several cases on the last day of illness, patients who had low grade fever were brought in for the second time. In these cases the fever gradually dropped to normal within a few hours. These cases belonged to the group where the fever dropped by lysis.

In 61 cases the rash appeared on the fourth day of illness. None of the 80 children in this series were bothered by the rash and no local treatment was necessary. The rash was rose red to pink in color, and macular and maculopapular, not unlike the rash in measles, and was confined mostly to the trunk and the face and to a lesser extent to the extremities. Barenberg and Greenspan reported that in their series the average time of appearance of the rash was three and nine-tenths days after the onset of the illness. Dickey suggests that the rash, before its appearance to an unaided eye, may sometimes be seen under the ultraviolet light as long as twenty-four hours before the crisis. In office practice close vigilance cannot be made and reliance is placed on history, and the data may not be as accurate as in a study made in an institution. In one case, a girl 2½ months old, the rash appeared without apparent sign of illness. The total white cell count was 7,200 with 80 per cent lymphocytes. This was probably a mild case of the disease. In 10 cases eruption occurred on the third day; in 5 on the fifth day; in 2 on the sixth day; and in 1 on the seventh day of illness. Out of 5 in whom the rash appeared on the fifth day, 2 had nasopharyngitis and 1 had diarrhea. Of the 2 who had rash on the sixth day of illness, 1 had follicular tonsillitis with white cell count of 16,000 with 72 per cent lymphocytes while the other had concomitant purulent otitis media in whom myringotomy was done on the third day. The while cell count on the first visit on the third day was 15,000 with 74 per cent lymphocytes. In the child where the rash appeared on the seventh day of illness the total white cell count on the fourth day was 13,400 with 40 per cent lymphocytes. On the sixth day he was still feverish and the total white cell count was 18,600 with 92 per cent lymphocytes. Most of these cases with rash appearing beyond the fourth day of illness had either tonsillitis, nasopharyngitis, otitis media or diarrhea.

There were no complications in this series. Ikeda[11] reported in 1925 that 24 per cent of his 70 cases had a complicating otitis media. Barenberg and Greenspan had 3 cases of otitis media

in their series of 54 cases and in spite of purulent infection, as a result of otitis media there were typical lymphocytosis and leukopenia. There was only 1 case of otitis media in this series and as mentioned above myringotomy was performed on the third day and the rash appeared on the sixth day. The cases with convulsions or bulging anterior fontanel showed no sequelae. Convulsions were due chiefly to abrupt onset of fever. The spinal fluid findings in such cases have been negative in my experience.

Since more than one child of susceptible age is rarely present in a family at the same time, neither the infectiousness nor the incubation period of the disease can be studied from cases seen in office practice. Observations made in institutions show that it is moderately infectious [12] and place the incubation period as between five and fifteen days, with an average of ten days.

As far as pathology is concerned this disease is of slight importance compared to other exanthematous diseases, but the symptoms may be quite annoying. I agree with Stafford [13] that unless this disease is kept in mind it can cause much anxiety not only to the parents but to the attending physician as well. The diagnosis of exanthem subitum is not difficult even before the eruption. The patient is usually under two years of age and is quite irritable and upon examination there may be no positive findings to explain the cause of fever. Quite often injection of the throat, nasopharyngitis, tonsillitis, diarrhea, vomiting, drowsiness or palpable postauricular and occipital glands may be present. Occasionally minute red punctate spots may be present in the mouth which resemble the Koplik's spots of measles except in color. Quite often there is a history of exposure to cold atmosphere, such as having been taken for a ride, or to the beach. Blood examination will aid in the diagnosis in most cases even from the first day of illness. It is differentiated from measles by the normal temperature when the rash appears and the absence of lacrimation and marked coryza, and from German measles by the blood count and longer prodromal fever.

DISCUSSION

Most observers consider exanthem subitum as a disease entity with a specific cause of unknown etiology, although some authors feel that it is not a clinical entity but an atypical form of influenza with toxic rash [14, 15]. Barenberg and Greenspan reported that one of their exanthem subitum patients developed "grip" at a later date. In 1940, during the epidemic of influenza in Hilo, no increase in the number of cases of exanthem subitum was observed (Table 2). This finding is in full agreement with that of Zahorsky, who states that during grip epidemics this exanthem is only occasionally encountered. It is my observation that when common colds are prevalent cases of exanthem subitum are seldom seen in the office.

Some maintain that this disease may be an expression of allergy toward some food substances or medicine. However, careful study of Barenberg and Greenspan in an institution and the report of Ryden [16] discount this theory. Zahorsky states that in this condition there is an absence of eosinophilia.

Certain features of the disease suggest that it may be an aberrant form of rubeola. 30 cases in this series had injected throat. Out of these, 6 had markedly injected buccal mucous membranes of whom 5 had minute red punctate spots where the Koplik's spots are usually present in measles. These spots were red instead of white as in measles. In 3 cases they were present only on the left side of the mouth and in 2 on both sides. In 3 cases they were present before the eruption and in 2 who were seen after the eruption, they were still present. These spots were not aphthous stomatitis lesions. 17 patients appeared drowsy, somewhat similar to the expression found in measles. These findings seem to corroborate the theory that it may be an aberrant form of rubeola. However, the review of 80 cases shows that there are no constant findings in the mouth and throat in exanthem subitum as in measles. This was also the observation of Jones.[17]

Although secondary infection is a possibility, the presence of upper respiratory infections is probably a coincidental infection rather than a part of the picture of exanthem subitum. Changing blood picture and eruption beyond the fourth day of illness favor this opinion. Occasionally the first blood count will show predominance of the polymorphonuclear cells and a second count a day or two later may show increase in lymphocytes. This reversal of blood picture seems to occur a few days before the eruption even in the presence of concomitant infection. There was only one case which failed to show this blood picture in spite of the rash on the fourth day with normal temperature.

Vomiting, diarrhea or constipation are commonly present in infants and young children in association with acute febrile disturbances and

many infections. In one child with bulging anterior fontanel there was no emesis while in others with vomiting other manifestations of cerebral disturbances were absent. Diarrhea was mild in all cases. Stools were loose to watery in consistency and yellow to green in color.

The enlargement of the postauricular and occipital lymph nodes is more than an incidental finding. There were 35 patients, or 44 per cent of the cases, with enlarged glands. In one child enlarged occipital glands with fever was the chief complaint. Many of the apparently normal infants and small children of Hawaii perspire quite profusely on the head and it was felt that this was one of the reasons for the frequency of the enlargement of the glands. However, in the child health conferences only about 15 per cent of the infants and small children have palpable postauricular and occipital glands, and these are in no way comparable in extent and degree to those encountered in exanthem subitum.

CONCLUSIONS

1. Exanthem subitum (roseola infantum) is the commonest perennial exanthematous disease in Hawaii in infants and small children under two years of age. It is most frequently observed between the ages of five and fourteen months.

2. Symptoms and signs other than fever and irritability may be present. These are probably due to the presence of concomitant infection.

3. The diagnosis of exanthem subitum is not difficult if this disease is kept in mind and blood examination is made whenever it is suspected. Chamber differential count is just as helpful as a smear examination. Granulopenia and lymphocytosis are more constant than leukopenia and they are present a few days before the eruption.

5. This disease as observed in Hawaii is similar to cases seen elsewhere.

205 Kinoole St.

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Ward Rounds in a Sugar Plantation Hospital

Reports of Five Cases

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It was felt that an informal article presenting brief case histories of certain patients in a sugar plantation hospital would be of interest not only to Mainland physicians but also to such Honolulu physicians as have never visited one of these hospitals. Possibly, too, other plantation physicians may find some phase of one or more of these cases of sufficient interest to justify this presentation.

The cases selected for this report were all patients of the Olaa Hospital on December 1, 1941. It may be that in some of them insufficient laboratory work has been done: possibly plantation hospitals should place more emphasis on such procedures. The cases are all presented in summary, lengthy details being omitted. Without further apology, a brief trip through the wards of a plantation hospital will be made.

Case Reports

Case 1. Number 57, E.P., a 12 year old boy, was admitted Nov. 28, 1941, complaining of pain in the right side of the neck of thirty-six hours' duration. He also stated that his throat was sore.

Examination showed what appeared to be acute myositis of the right sternocleidomastoid muscle. The pharynx was slightly reddened; the temperature was 99F, pulse 100 per minute, respirations 20 per minute, and the urine normal. There was a leukocytosis of 13,400, with 70% polymorphonuclear leukocytes; the hemoglobin was 65% of normal, and the red count 3.57 million per cubic millimeter. Reflexes were generally hyperactive. There was limited motion in the right sternocleidomastoid muscle, the patient preferring to hold his head turned toward the left side.

The patient was given 7½ grains (0.5 grams) of sulfathiazole every eight hours: despite the negative cultures, it was thought he might have an early streptococcic sore throat. Twenty-four hours after admission his temperature was 98.6F and his pulse 80; he felt much better. Forty-eight hours after admission he refused to eat, stating that he could not open his mouth well or chew food.

Examination at this time showed a moderate degree of tetany of the muscles of the jaw and neck. There was also some stiffness of the back.

(Though he had previously denied any nail wounds, our records showed that he had been treated for a nail puncture wound of the right sole two months before. At that time the wound was opened, iodine injected with a needle to its depths, and 1500 units of tetanus antitoxin given.)

The patient then proceeded to develop the typical picture of tetanus, with spasm of muscles, particularly those of the jaw, neck, abdomen and spine. He was given various sedatives, especially nembutal in 1½ grain doses, without relief. Finally, on December 1, he was given by rectum 50 cc. of Barb-eth-oil, a mixture of ether, mineral oil, Neonal and ethyl barbituric acid which we have used extensively as an obstetrical analgesic. He was free of spasm for twenty-four hours, and slept well. This was repeated the following night.

The morning after the first dose of Barb-eth-oil the patient began to take liquids, and from then on showed steady improvement. He had been given a total of 40,000 units of tetanus antitoxin—one-half by vein, one-fourth intraspinally and one-fourth intramuscularly—upon the appearance of tetany of the jaw muscles. The spinal fluid cell count was six, and other tests on it were normal. One day later an additional 40,000 units was given by muscle and vein, and 4,000 units injected around the site of the old nail wound; the area of the wound itself was excised. The patient was discharged, well, on December 10.

This case is of interest because of the development of tetanus two months after the original wound was incurred, and because of the relief of spasm by the use of rectal Barb-eth-oil when other drugs seemed to fail.

Case 2. Number 719, K.N., a 26 year old Japanese housewife, was admitted November 27, 1941, because of fever, aches and pains all over the body, severe headache, loss of appetite, and marked prostration. Temperature was 101F. Nasal and pharyngeal mucous membranes were congested. The white count was 6,000 per cubic millimeter. There were no other significant findings. Five days later the patient was well, her temperature normal, and she was discharged.

This case is felt to be one of influenza. Since November 15th I have had about 200 such cases, and I definitely feel there is now a mild epidemic in the Territory.

This case is also presented because of her past history. She was well until the birth of her second child, in October 1939, when she began to have frequent dizzy spells, fatigue upon the slightest exertion, and complete inability to carry on her usual household duties. Her menses were regular and normal, her appetite excellent, and she had no pain. Her weight fell off from 100 to as low as 87 pounds.

She was extensively studied in the Olaa and Hilo Hospitals, with the following findings: tuberculin test (P.P.D.) negative; urine and stool examinations normal; red count 4.6 million, with 14 grams of hemoglobin and normal-looking red cells; white count 8,050, with

40% polymorphonuclear leukocytes, 8% stab forms, 7% metamyelocytes, 42% lymphocytes, and 3% eosinophiles; fasting blood sugar 77 mgm. per hundred cubic centimeters; non-protein nitrogen 34., urea nitrogen 15.4, uric acid 3.6, creatinine 2, cholesterol 136; B.M.R. +15% and −2%; E.K.G. normal. Physical examination revealed only underweight, loss of tone and strength of all muscles, brownish discoloration of the skin of her face, and a blood pressure of 100/60.

Treatment was without avail until October, 1940, when it was decided that she probably had a chronic suprarenal deficiency and she was started on 0.5 cc. daily of an adrenal cortical extract, 1 gram of enteric coated sodium chloride three times a day, and a low-potassium diet. She noted immediate relief, with a weight gain from 87 to 98 pounds in two months, though the sodium chloride had to be stopped because of intolerance after three weeks. Recently, synthetic desoxycorticosterone acetate has been substituted for the cortical extract, and she has remained symptom-free on a dose of 1 cc. weekly, with immediate relapse on several occasions when our supply of the drug became exhausted. It is planned to secure pellets of this material and plant them in her subcutaneous tissue for slow absorption.

Case 3. Number 669, T.S., a 19 year old Japanese boy, was admitted October 25, 1941, because of fever, headache, pain all over the body, and a feeling of being "too weak to stand up." He had been ill at home for two days.

Examination revealed only generalized weakness, marked injection of the sclera of the left eye, and fever. Temperature was 101F, pulse 100; the white count was 19,500, the red count 2.28 million, and the hemoglobin 50% of normal; the urine was very dark, and showed 1 plus albumin. The following day both eyes were injected, and the patient developed epistaxis, vomited blood, and had bloody stools. Two days later jaundice appeared, and steadily deepened.

Guinea pigs were inoculated with both urine and blood; after four days the animal inoculated with blood died, and autopsy revealed the typical picture of Weil's disease, with leptospira in the liver and kidney tissues.

The nose-bleeds were a major problem and required constant treatment, including tight post-nasal packs. Two blood transfusions had been given from donors who had not had Weil's disease. He made slow but steady recovery and was discharged on December 1, 1941.

At the time of this boy's admission, a near neighbor of his was in the hospital recovering from a severe attack of Weil's disease, also proven by recovery of leptospira from inoculated guinea-pigs. (Unlike this boy, the neighbor did not show the marked scleral injection that has previously been commented upon by Dr. Keay of Pepeekeo.) Recent literature suggests that Weil's disease is a very rare condition, but our experience in the Islands, as shown by a report of the Bureau of Communicable Diseases, does not confirm this. However, all cases of jaundice are not Weil's disease; the diagnosis must always be verified by accepted laboratory procedures, including guinea-pig inoculation. A comprehensive article bringing this subject up to date seems indicated.

Case 4. Number 753, W.R., a 5 year old boy, was admitted June 7, 1940, because of edema of the face, arms, legs and abdomen. The urine showed 4 plus albumin, Sp.G. (not corrected for albumin) 1.020, acid reaction, and no cells, casts or sugar. The white blood cell count was 13,100 per cubic millimeter, the hemoglobin 75%, the red count 4.75 million; the blood non-protein nitrogen was 34 milligrams per hundred cubic centimeters, the blood cholesterol 340, and the serum protein 3.8 grams per hundred cubic centimeters, of which albumin was 1.0%, globulin 1.09%, and fibrinogen 1.7%—a reversal of the albumin-globulin ratio.

During eighteen months of constant observation in the hospital, this patient has shown no signs of chronic nephritis. He has been tried on various regimes, the most effective of which has been a low-salt, high-protein diet, with restriction of fluids to 700 cc. daily. Diuretics have proven ineffectual. Abdominal paracentesis has to be done about once a month, about 3 liters being obtained each time. His mentality is high. Chest X-ray shows no evidence of adhesive pericarditis.

This boy is presented as a case of lipoid nephrosis, with a prognosis of future chronic nephritis or death from intercurrent infection, such as a pneumococcic peritonitis. The latter was the outcome of a similar case we had two years ago in an eighteen year old boy, and similar cases have been reported.

Case 5. Number 678, a 28 year old Japanese woman, unmarried, was admitted October 28, 1941, because of a severe prolapse of the rectum.

She had gone as far as the fourth grade in school when she began to become so reticent that schooling was stopped. Nine years ago, at the age of nineteen, she went to bed, and has remained there since. Her aged mother had been attending to her every need. She ate only under compulsion, and urinated and defecated in the bed; in short, she led a completely vegetative existence, and never spoke to anyone. The rectal prolapse developed about seven years ago and has grown steadily worse. At the time of admission it had been coming down every four or five days, and protruded about seven inches.

Examination revealed a moderately tall 28 year old girl weighing only 79 pounds, with flabby, ribbon-like musculature. She was completely withdrawn, burying her head in her arms when approached, and catatonic: her arms and legs would remain in any position in which they were placed, until they became exhausted.

The urine contained a trace of albumin, with 15 to 20 pus cells per high-power field; the white count was 7,000, the red count 2.27 million, and the hemoglobin 55%. There was a low-grade vaginitis and cervicitis, due to a prolapse of the uterus which accompanied the prolapse of the rectum. The protruding rectum measured about 7 inches from its apex to the dilated sphincter, and was about 5 inches in diameter by reason of edema and congestion.

The prolapse was reduced, and the patient was given general supportive treatment for two weeks. She was then submitted to a Vernon David modification of the Rehn-Delorme operation, as outlined by Horsley,

for correction of the prolapse. Cyclopropane anesthesia was used. Considerable blood was lost, and before the operation was completed the patient went into severe shock. Two transfusions of 500 cc. citrated blood each were given, along with oxygen and adrenalin, and the operation completed. For forty-eight hours afterward she was critically ill, but then began to rally and has improved rapidly since. She is now feeding herself, walking with assistance, and using a toilet; she greets her physician with "Good morning" and answers simple questions with "yes" and "no."

The report of this case is preliminary, but it is presented as a case of schizophrenia, catatonic type, with remarkable recovery following a prolonged period of severe surgical shock.

SUMMARY

Five cases in the wards of a sugar plantation hospital have been presented: (1) a case of *tetanus* beginning two months after the wound that presumably caused it, and relieved by rectal barbiturates and ether in oil; (2) a case of *influenza* in a patient believed to have *Addison's disease,* with the suggestion that an influenza epidemic may be beginning in the Territory; (3) a case of *Weil's disease,* with the suggestion that a comprehensive article on this subject seems indicated because of the prevalence of this disease in the Territory; (4) a case of *lipoid nephrosis* in a 5 year old boy; and (5) a case of *schizophrenia* with striking improvement following—and, we believe, due to—a prolonged period of severe surgical shock following surgical correction of a rectal prolapse.

Clinical Suggestions from a Plantation Hospital

W. N. Bergin, M.D.
Laupahoehoe, Hawaii

Vatsol—A Solvent of Many Purposes

Two years ago Dr. F. E. Hance of the H.S.P.A. Experiment Station, speaking on weed spraying problems, demonstrated a wetting agent known commercially as Vatsol, "the stuff that makes ducks sink." He dipped a waxy panex leaf in a glass of water and of course the water ran right off; the same leaf dipped in 1:200 Vatsol solution came out wringing wet.

It occurred to me then that Vatsol should make a good antiseptic solvent as it reduces surface tension to zero and would permit a marked increase in penetration. I prepared a 10% Mercurochrome solution using 1:200 Vatsol as a solvent instead of water; greasing my arm well with mineral oil I dropped a drop of this solution on the oily surface. As the accompanying illustration shows, it immediately wet the oily coating and spread out to cover an area about the size of a half dollar. Aqueous Mercurochrome would not wet the surface at all; the drop either remained on the oil or rolled off.

Fig. 1. Left: Aqueous Mercurocrome 10%. Right: Mercurocrome 10% in 1:200 Vatsol.

This solution makes a good solvent for other antiseptics such as mercuric chloride, potassium permanganate, potassium-mercuric iodide, oxycyanide of mercury, etc., and would permit better penetration of antiseptics into oiled joints of instruments.

Vatsol solution plain as an ear douche is much better than water for loosening inpacted cerumen. It is no more irritating to mucous membranes than soapy water, and can be used in the various body cavities. Silver nitrate, silver picrate and the various silver proteins are soluble in it. The sulfa drugs are as soluble in it as they are in water, and gentle heating increases their solubility. It should promote the penetration of the drug through the waxy capsules of many organisms. In this connection it seems the staining qualities of various dyes might be enhanced. Many of the burns that arrive greased might have medication applied by spray instead of first painfully removing the oily coating.

Vatsol is the American Cyanamide & Chemical Company's trade name for the ethyl esther of dicarboxylic acid and is distributed in the Territory by the Pacific Guano & Fertilizer Company. It is mildly antiseptic; it is relatively inert, harmless to skin and mucous membranes, and non-poisonous. The solution placed in the mouth produces a puckering sensation which soon disappears. It has the added advantage of being extremely cheap.

Container For Storing Blood

The accompanying illustration shows the adaption of empty Baxter Vacoliter bottles for drawing, storing and administering blood at the Laupahoehoe Sugar Company's Hospital.

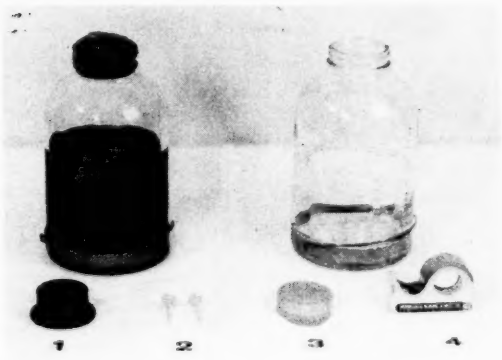


Fig. 2. Left: Filled and sealed container. Right: Container empty. Foreground: 1. Vacoliter stopper, 2. Plastic golf tees, 3. Hygeia food cell cover, 4. Scotch tape.

In order to properly cleanse the bottles, the band sealing the stopper was cut with a circular saw and the stopper removed. In doing this most of the vent tubes were broken. In drawing the blood these were replaced by sterile glass drinking straws, which were removed when the bleeding was completed. Two sterile plastic golf tees were inserted into the holes in the stopper, the top covered with a sterile Hygeia food cell cover such as is used ordinarily for covering infant feeding bottles, and the cover sealed with Scotch (cellulose) tape. The golf tees soften and become deformed from heating; they should therefore be sterilized by soaking in potassium-mercuric iodide solution 1:2000 or some similar preparation.

A SERVICEABLE POWER BONE TOOL

The Fordom Electric Company, 27 Park Place, New York, manufactures several models of flexible shaft tools. The shafts are readily detachable and can be sterilized by autoclaving. They should be lubricated before each use by sterile petrolatum or castor oil. The tool illustrated is one of the lighter models but is capable of many of the functions of the usual orthopedic saws such as insertion of bicycle spokes for skeletal traction, cutting of bone grafts, pegs, and inlays, drilling, notching and rough shaping, as well as multiple drilling

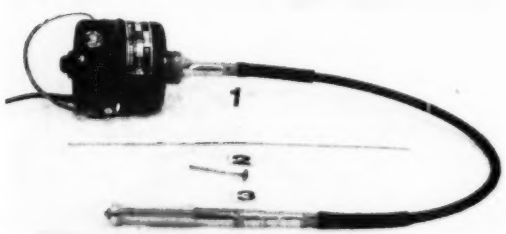


Fig. 3. The Fordom Flexible Shaft Tool: 1. Joint at which flexible shaft can be detached for sterilizing; 2. Bicycle spoke with end trimmed for use as traction pin; 3. Saw.

for non-union. The outfit, complete with assorted accessories, costs $13.75 and for a little more comes provided with a spring connection between the hand piece and flexible shaft, giving additional flexibility at the point where it is most needed. Burrs, mandrels, saws, drills, etc., can be purchased quite reasonably and with the addition of a foot switch (an auto starter switch makes a good one) a cheap bone tool is within the reach of many institutions whose occasional use of such a device would not warrant the cost of the bone tools manufactured by the instrument makers.

THE USE OF COTTON AS NON-ABSORBABLE SUTURE

In these days when non-absorbable suture material is becoming more and more popular and prepared suture material from the mainland harder to get, attention is called to the work of Drs. Alton Ochsner and Mims Gage on cotton at Charity Hospital in New Orleans. The cotton they use is the ordinary J. & P. Coats cotton sold in dry-good stores. During the past 8 months I have used it exclusively in 53 operations and am very pleased with it. It makes excellent material for tendon repair, and, according to the experimental work of Dr. John M. Farris of Ann Arbor, it is far less irritating than silk. The only places where it should not be used are in operations on the biliary and urinary tracts where, like silk or any other non-absorbable suture, it tends to act as a nidus for stone formation. Ochsner especially favors its use in contaminated wounds. Unlike silk, it rarely provokes the formation of a suture sinus unless knots are placed immediately beneath the skin.

Cotton is prepared for use by loosely winding on two-inch lengths of rubber tubing as it shrinks during autoclaving and some of the fibres would be broken were it sterilized on a hard core. It is then sterilized by boiling in water for twenty minutes or autoclaving at fifteen pounds pressure for fifteen minutes.

Sizes 20 and 30 are adequate for peritoneum, fascia and skin, and sizes 50 and 80 for ligating small vessels. It is quite limp and at first seems difficult to handle, but one soon becomes accustomed to this quality. It should never be used as a continuous suture; small bites of tissue should be taken in interrupted sutures and the ends cut extremely close to the knot thereby leaving a minimal amount of foreign material. Cutting close to the knot is quite safe as a square knot in cotton does not slip as it might with catgut.

An interesting article by Drs. Meade and Long appeared on this subject in the December 20, 1941, issue of the Journal of the American Medical Association.

Pneumococcus Meningitis

Report of Apparent Cure with Sulfanilamide

C. Bruce Brown, M.D.
Hilo, Hawaii

The author of the section on pneumococcus meningitis in Nelson's Loose-Leaf Medicine says, "All of our cases died, and this is the general experience. The writer does not personally know of a single case of pneumococcus meningitis in which the diagnosis has been made with sufficient attention to bacteriologic technique to meet all objections, in which recovery has taken place."

This statement exemplifies very well the feeling that existed with regard to this disease prior to the advent of the sulfonamide drugs. The case presented herewith was treated over three years ago, at a time when sulfanilamide was the only available member of the series.

Case Report

Case No. 21861, Hilo Memorial Hospital. E.V.S., a 17-year-old Hawaiian-Caucasian boy, was admitted to the hospital on the service of Dr. S. R. Brown, on December 7, 1938. He gave a history of a "cold" two weeks before, of only a few days' duration, following which he returned to work. A few days later, on December 5th, he developed a severe frontal headache; the following night he vomited and complained of pain in the right ear. The day of admission he developed stiffness of the neck, and when brought to the hospital he was semicomatose, muttering and disoriented, and required restraint.

On examination he was found to have marked spasticity of the neck; Kernig's sign was present. The spinal fluid was under increased pressure, and turbid, with flakes of pus. A stained smear showed numerous encapsulated diplococci which were identified as type 13 pneumococci. Type-specific serum not being available, one intramuscular therapeutic dose of Lilly's antipneumococcus serum (S-95) was given. At the same time Prontosil, 10 cc., was given intramuscularly, and sulfanilamide was started by mouth in a dose of 30 grains (2 grams) every three hours. After forty-eight hours this was reduced to 30 grains (2 grams) every four hours; it was continued at this level for two weeks.

The morning after admission the patient was conscious and rational, and complained of pain in the right ear; the otological consultant reported hyperemia of the right drum membrane, without bulging, sagging of the upper posterior canal-wall, or mastoid tenderness. A diagnosis of early otitis media was made. A general physical examination revealed no other positive findings. The spinal tap was repeated this day, and daily for the

Cerebrospinal Fluid Findings

Date	*Appearance*	*Globulin*	*R.B.C. per cu. mm.*	*Leucocytes*			*Bacteriologic Examinations*
				Total per cu. mm.	*Polys %*	*Lymphocytes %*	
12-7-38	Turbid (flakes of pus)	+++	0	6,640	—	—	Direct smear: many Gram-positive diplococci with capsule; Neufeld reaction positive, type 13.
12-8-38	Cloudy	++	0	7,600	90	10	Direct smear: pus cells; no bacteria.
12-9-38	Turbid	+	0	3,840	92	8	Direct smear: occasional Gram-positive diplococcus. Culture: bile-soluble Gram-positive diplococci.
12-10-38	Pale yellow	+	0	2,100	76	24	Direct smear: occasional Gram-positive diplococcus. Culture: Gram-positive cocci, some in short chains, bile soluble.
12-11-38	Cloudy	+	0	1,410	68	32	Direct smear: no bacteria. Culture: no growth in four days.
12-12-38	Clear	trace	0	750	88	12	Direct smear: no organism. Culture: no growth.
12-13-38	Clear	trace	0	47	46	54	
12-14-38	Clear	trace	0	29	10	90	
12-15-38	Clear	trace	0	3	—	—	

following week. The spinal fluid changes are shown in the accompanying chart, *q.v.* Sputum examination on December 8th showed numerous cocci and diplococci, with a positive Neufeld reaction with type 13 serum on a few of the latter.

The patient improved slowly but steadily, and by the seventeenth hospital day he had no residual symptoms except deafness in the right ear. When he was discharged, on January 10, 1939, thirty-four days after admission, this had improved considerably.

COMMENT

Of interest, but of questionable significance in this case, is the history of a compound depressed skull fracture in 1928 which required surgical decompression. Recovery from this was uneventful and there were no sequelae.

The effectiveness of sulfanilamide against the pneumococcus in this and in other reported cases of meningitis should be kept in mind, particularly for cases which may fail to respond, or which may prove dangerously sensitive, to sulfapyridine.

Prematurity: The Leading Cause of Infant Deaths in Hawaii [1]

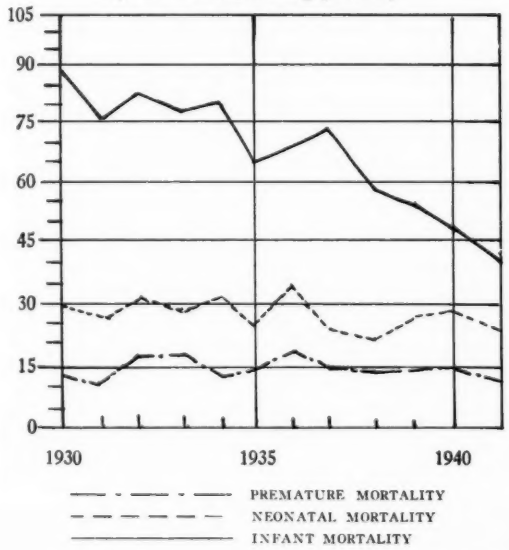
A Proposed Plan For Care Of Premature Infants

C. L. Wilbar, Jr., M.D.
Honolulu

The infant death rate in Hawaii has dropped during the past twelve years from 87 to 43 per 1,000 live births. *The premature death rate is the same now as it was at the beginning of this period.* During the past fiscal year prematurity was certified as the cause of 128 infant deaths—nearly one-third of the total. We may be justly proud of the rapid drop in infant mortality; it is evidence of real progress in the attack on nearly all causes of infant deaths; but there is one outstanding exception: prematurity. The accompanying graph illustrates this situation.

Trend of Infant Mortality, Neonatal Mortality and Premature Mortality

Rate per 1000 Livebirths
Territory of Hawaii 1930 - 1941
(Fiscal Years, Ending June 30)



The proportion of premature to full term births is no higher in Hawaii than elsewhere; but of all the prematures born here, approximately 40 per cent die. This compares unfavorably with the mortality in many mainland communities, particularly those in which adequate programs for the care of premature infants have been developed. The city of Chicago, for example, with one of the best of these programs, reports a mortality of only 19 per cent among its premature infants; Boston and Minneapolis are only a little higher.

There are no insurmountable difficulties in the way of establishing an adequate program for lowering the death rate in prematurely born infants. In general, such programs all embody the following principal features:

(1) Nurses, adequately trained for this special work, in contant attendance on prematures;

(2) Adequate special hospital facilities for the care of prematures;

(3) Supervision of the care of prematures by physicians who have had specialistic training along this line; and

(4) Adequate facilities for transporting prematurely born infants from homes to hospitals.

Let us consider each of these headings individually, and see how they might be applied in Hawaii.

Nursing Care

Dr. Julius H. Hess, probably this country's leading authority on the care of prematures, stated at the annual meeting of the American Public Health Association in October, 1940, that the most important single factor in keeping prematures alive is *constant attendance by adequately trained nurses.* Dr. Charles H. McKhann and other leading pediatricians concur in this belief.

The reason for this is that prematurely born infants frequently die because of just a few minutes' delay in instituting proper supportive measures such as administration of oxygen, artificial respiration or heat, and cleaning out of the nasal passages. Nearly two-thirds of premature infant deaths occur within the first twenty-four hours of life, and many of them can be prevented if the attendant is enabled by adequate training to recognize warning signs in time to institute the proper supportive treatment.

[1] From the Bureau of Maternal and Child Health of the Territorial Board of Health. Submitted for publication November, 1941.

"Adequate training" does not mean merely a few years spent in some hospital nursery, or a few hours spent in listening to lectures; it means specialistic training in one of the large premature centers in the country, or comprehensive courses in premature care conducted by individuals who have been properly trained in one of those centers. There are very few nurses now in the Territory who are really adequately trained in the care of premature infants; however, the Bureau of Maternal and Child Health has a consultant nurse who is well trained in the care of prematures and is perfectly competent to teach this subject to hospital nurses upon request.

HOSPITAL FACILITIES

The hospital facilities necessary for the proper care of prematures are, unfortunately, somewhat expensive. It is therefore not ordinarily practical to designate more than one or two hospitals in any given community as centers for premature care. In this way the money spent can be used most efficiently. The equipment needed includes efficient automatic control of temperature and humidity for the premature infants, both collectively and individually, as well as facilities for maintaining asepsis in the surroundings, a properly equipped milk laboratory, available breast milk, and separate rooms for infectious cases and for any cases born outside the hospital.

SUPERVISION BY TRAINED PHYSICIANS

The knowledge required for the adequate medical care of a prematurely born infant is as highly specialized as that required for the practice of ophthalmic surgery, roentgenology, or any other specialty. Although, as has been pointed out, the adequately trained physician is nowhere near as important as the adequately trained nurse, because of the frequently emergency nature of the problems involved, a successful premature program must have its general policies controlled and supervised by a physician specially trained in the care of premature infants. This usually means, of course, a pediatrician, preferably one who has had fairly recent post-graduate instruction in this particular field.

ADEQUATE TRANSPORTATION

This is indispensable, for the reason that it is well-nigh impossible to improvise in the home adequate facilities for the care of the premature. Special, properly trained nurses are often beyond the family's means; regulation of temperature and humidity is very difficult; and maintenance of of an aseptic environment is impossible. Prematures born at home must, therefore, be transported as soon as possible to the hospital.

The essential features of the transportation facilities required are a heated unit, available oxygen, and a clean environment. The portable Hess incubator which has proven so successful in Chicago is a good example of a proper transportation unit. It can be sterilized, it contains a thermostatically controlled heating unit and a connection for oxygen administration, and it can be electrically connected to the ceiling-light socket of an automobile.

Because we have in the Territory no adequately equipped hospital for premature care, to which prematures born at home might be taken, this problem of transportation need not concern us at the moment. However, the plans for the new children's hospital in Honolulu include proper facilities and space for the care of prematures, and when these become available, proper transportation facilities will immediately be of the utmost importance.

CONCLUSION

Our present method of caring for prematurely born infants is not satisfactory; far too many of them die. This is not merely an individual, but a *community* problem, which should be supported by public funds as well as by private enterprise. Our combined resources must be called upon if our program for premature care is to rise to the same level as treatment in the other medical and surgical specialties. Other communities have done it—and so can Hawaii!

Dyschondroplasia (Ollier's Disease)

Review of the Syndrome and Report of a Case

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Pepeekeo, Hawaii

Achondroplastics have been recognized for centuries. Sculptures indicate that this type of dwarfism was known in ancient Egypt, and many of the dwarfs pictured in art belong to this group. Everyone is familiar with these peculiarly short-limbed dwarfs, with their large heads and characteristic faces, in which the nostrils seem directed almost forward. They are usually intelligent, active and strong. They may reach an advanced age and bear children, though, on account of the deformity of the pelvis, these must be delivered by cesarean section.

History

There seems to be a very close resemblance between this type of dwarf and the one being presented in this paper, not only in clinical appearance, but also in pathologic anatomy. The type here presented might be described as "half-dwarf". Ollier in 1899 first described a case of cartilaginous dystrophy in which the extremities of one side of the body were involved. In 1900 his pupil Molin described 3 similar cases. According to Ehrenfried (1915), Virchow described a similar condition, calling it "multiple cartilaginous exostosis." Ehrenfried reviewed over 600 cases in the foreign literature and 75 in the American, covering the period 1900-1917. Hale has reviewed an additional 53 cases reported in the literature between 1917 and 1930.

Etiology

Bentzon, in 1923, described lesions confined to the right leg. He also did experimental work in rabbits, injecting irritants near the nutrient arteries of the tibia and fibula, and developed the theory that Ollier's disease could be interpreted as the reaction of bone to an active hyperemia due to anomalies of the sympathetic nervous system. However, it is generally felt at the present time that the etiology of the syndrome is unknown.

Frangenheim and others consider Ollier's disease not as a pathologic entity but as a clinical syndrome which, together with the multiple enchondromas and the cartilaginous exostoses, makes up the great group of dyschondroplasias. These other two disorders are characterized by multiplicity of localization; they are derived from the conjugate cartilage; and they are often found combined in the same individual.

Pathology

The earliest evidence of this disease is usually noticed in infancy or early childhood in the form of hard irregular nodules attached to various long bones in the region of their epiphyses. Premature

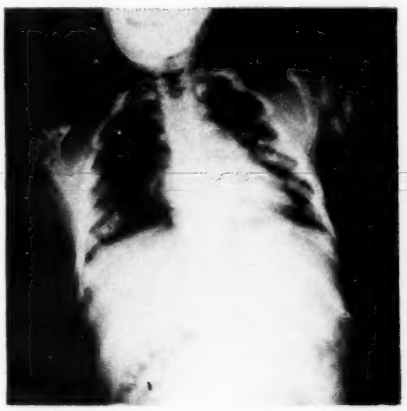

Fig. 1. (left) Note involvement of left third, sixth, ninth and tenth ribs and inferior angle and vertebral border of right scapula.

Fig. 2. (center) Left humerus. Note limitation of lesion to proximal portion of shaft, sparing the proximal epiphysis and the distal portion of the shaft.

Fig. 3. (right) Forearms. Lesion confined to shaft of left radius. Note characteristic "mushrooming" about the epiphysis and the typical moth-eaten appearance of the lesion, with scattered areas of beginning calcification. Note also unusual involvement of shaft of proximal phalanx of left second digit.

Fig. 4. (left) Pelvis and femurs. Note involvement of both ends of left femur, distal end of right femur, and both innominate bones. Also probable early lesion of the fourth lumbar vertebra.

Fig. 5. (right) Legs. Early lesion, distal end of shaft of right femur; advanced lesions of left femur, tibia, and fibula. The shortening is well shown. The beginning involvement of the right side suggests that this may be in a transitional stage from a fairly typical Ollier's disease to the more crippling Morquio's disease, which may involve the entire skeleton with the exception of the skull.

ossification of the cartilage occurs, and the long bones become shorter, though not thinner, than normal. At first sight it would seem that the epiphyses were the chief site of involvement; actually, in the majority of cases, the epiphyses are normal. The increase in size at the bone ends is due to a cup-shaped enlargement of the diaphysis around the epiphysis; this may be so large as to actually interfere with joint motion.

The viscera, including the endocrine glands, are found to be quite normal; all the changes are explained on the basis of disturbed cartilage-growth.

PROGNOSIS

Few patients die of the disease, and it apparently becomes at least arrested at adolescence, though no retrogression is noted. No new osteochondromas occur, and no new deformities; and there is roentgenographic evidence of the normal progression of ossification. Occasionally there may be pressure on the spinal column from an exostosis; paralysis may occur, or an aneurysm may develop because of pressure. Some reports suggest that patients with dyschondroplasia have an abnormal tendency to the development of sarcoma in middle life.

TREATMENT

There is no known treatment for the disease. Surgery is employed only for the relief of marked deformities or limitation of motion of joints.

A comment in the 1941 Year Book of Radiology suggests that there are points of similarity between epiphyseal dysgenesis associated with hypothyroidism, and osteochondritis deformans juvenilis. The former responds to thyroid medication; perhaps similar treatment would help in these cases.

CASE REPORT

E.L., a 9 year old Portuguese-Filipina, had been born at the Pepeekeo Hospital after an easy 2½ hour labor; aside from an 18 hour delay in expulsion of the placenta, both the pregnancy and the delivery were uneventful. The patient's mother was Portuguese, and had had one previous child. The father was a Filipino, 32 years old. The child was normal at birth, and weighed 8 pounds. Neither parent gave any family history of dwarfism.

According to the father, the patient seemed perfectly normal until about 9 months of age, when she began to crawl. At that time he noticed that she kept her left leg up off the floor. She talked at 2 years of age, and first walked at 3.

Patient E.L., December, 1941, showing shortening of left tibia and fibula and knobby enlargement at distal end of tibia, fibula and ulna.

As she grew older, asymmetry of her body and extremities became more and more noticeable. There was decrease of linear growth of the left leg and forearm, with progressive deformity.

The child underwent an uneventful tonsillectomy and adenoidectomy under general anesthesia in November, 1937, and a simple mastoidectomy (right side) in December of the same year.

At the time of the latter hospital admission, skeletal measurements were made and roentgenograms taken. The latter were sent to Dr. Craig of Honolulu and Dr. Morton of Rochester, New York, who agreed on a diagnosis of Ollier's disease. The skeletal measurements at that time were as follows:

	RIGHT	LEFT
Arms (acromion to finger-tips)	18 in.	15½ in.
Legs (ant. sup. spine to int. malleolus)	20 in.	16½ in.

In March, 1940, the patient was readmitted for bone studies. Physical examination revealed no abnormalities other than the skeletal deformities. There was shortening

of the left humerus, tibia, and fibula, with knobby deformity of the distal epiphysis of the left radius and ulna and both epiphyses of the left tibia. Other bones, except for the left scapula, were grossly normal.

The blood serum calcium was 9.9 milligrams per cent, and the blood serum phosphorus 3.3; Wassermann and Kahn were negative; the urine contained 2 plus albumin, a few red and a few white blood cells and a few mixed organisms, and no sugar or casts.

The measurements of the affected extremities at the present time (December, 1941) are as follows:

	RIGHT	LEFT
Arms (acromion to finger tips)	23 in.	19½ in.
Legs (ant. sup. spine to int. malleolus)	24¼ in.	19 in.

SUMMARY

The syndrome of chondrodysplasia has been reviewed, and a case of dyschondroplasia (Ollier's disease) has been reported.

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EDITORIALS

VENEREAL DISEASE CONTROL

In these times of mobilization, with the introduction of large numbers of service personnel into various communities, the problem of control of venereal disease is more than ever a subject of discussion among medical officers, civilian physicians, and moralists, alike. Without attempting to comment on any plan for this purpose, let us just glance briefly at Hawaii's record in this regard.

Prior to 1928, the incidence of venereal diseases among the army personnel in the Territory of Hawaii was practically the same as that in the United States at large. Since that time it has dropped sharply, and has fluctuated for the most part between one-fourth and one-half that of the United States generally. It is about one-third that of the United States at large, at the present time.

A communication from a high-ranking naval officer to a public health physician a few months ago commented on the gratification with which the Navy had observed a drop of nearly 40% in the venereal disease incidence in the Pacific Squadron, since its arrival in Honolulu nearly a year ago. The letter went on to say that this was the more pleasing, because of the fact that the incidence of venereal disease in the Atlantic Squadron had not changed appreciably over this same period of time, and still remained at its original level.

The eagerness with which a certain type of mind pursues that elusive will o' the wisp known as "stamping out prostitution" might well be dampened a bit by perusal of these facts. There is food for reflection in them. It is of course the view of nearly all medical men and of most other thinking persons that the most important objection to prostitution in a community lies in its tendency to spread venereal infection. If this is correct, and if our record in the matter of venereal disease control is so enviable—and figures (not merely statistics) are available to prove it—it might be well for us to consider the reasons therefor. And it might be well to make sure, before any changes are made, that they will in fact be changes in the right direction. It would appear that we are already doing a remarkably effective job of controlling venereal infection in Hawaii. Let's not put anything else into the machinery without first making certain that it isn't a monkey wrench!

ATTEND
YOUR THURSDAY MORNING MEETINGS

The responsibilities of the Honolulu County Medical Society have never been greater than now, and its functions have never been more important to its members and to the community in general. It happens that the same forces that have brought this situation about have made it impossible to hold the monthly scientific and business meetings of the Society. It has seemed advisable to substitute weekly daytime meetings in place of the former monthly evening meetings, and through the courtesy of Dr. Louis Hirsch, acting in the absence of Dr. Nils P. Larsen, these have been incorporated with the Thursday Morning Clinics. The combination meetings are being held at the usual hour—9 o'clock on Thursday morning—in the auditorium of the Mabel Smyth Building instead of in the nurses' classroom as formerly.

Important announcements have frequently to be made at these meetings; decisions must often be made which affect the entire Society; the civil and military authorities occasionally find it necessary to communicate with the Society as a whole, and use these meetings for that purpose. The attendance at these meetings should be sufficiently large to come reasonably near being representative of the entire Society.

For your Society officers and committee chairmen, and representatives of the Medical Office of Civilian Defense and the Army and Navy, to have to address their remarks to a handful of members, constitutes a gross discourtesy to them, and gives the Society itself a distinct "black eye." Nor does the fact that nearly half the turnout consists of Army, Navy and Public Health Service officers put the civilian doctors in any better light.

If you are really too busy to spend an hour in this way on Thursday mornings, and too *akamai** medically to profit by the active and interesting clinical session which immediately follows the business meeting, perhaps you can spare 30 minutes—for the business meeting seldom lasts after 9:30 and is frequently over even earlier. We will take the liberty to doubt that any doctor cannot usually arrange to be where he likes for half an hour on any given morning each week. Honesty, we think, would compel most of us to admit that our failure to attend these meetings was due oftener to laziness or lack of interest than to honest inability to attend. Both attitudes are, in this day, inexcusable. They reflect no credit on the men who assume them, and they reflect no credit on the Society of which such men are members.

NURSES ARE SCARCE

Physicians who, during the present shortage, call nurses for patients who have no actual need for them, will find their seriously ill patients obliged to get along without special care. This is the warning sounded by the Nursing Service Bureau.

Elsewhere in this issue, under reports of the Office of Civilian Defense, is given an account of the serious shortage of nurses in the Territory and what is being done about it, and an appeal is made here to all physicians to be very conscientious in calling for private duty nurses. Wealth, laziness or fussiness on the part of patients should not be the criterion for tying up the services of a nurse when the hospitals are so short-staffed and "specials" are hard to get for the seriously ill.

This matter is largely in the control of the doctors, and you are asked to cooperate at least until such time as the additional nurses now being recruited on the mainland arrive to lighten the general burden.

A few other suggestions that come from the Bureau may be worthy of consideration:

Some doctors feel that private duty nurses are *never* a necessity and expect the hospital staff to give frequent and prolonged nursing service to their seriously ill patients, special nurses are not called until there has been complaint of staff care and often then the special arrives after the most difficult period of nursing is past. Consideration should be given to the hospital staff nurses, inadequate as they are in number today, and overburdened.

Special nurses are often called too late in the evenings to find transportation. A little forethought might correct this.

MEDICAL UNPREPAREDNESS: II

Under this heading in our last issue we detailed a few items indicative of the usual superiority of hindsight over foresight. Further evidence is presented herewith.

The designation of first aid and other medical units by the symbol of the red cross created so much confusion in people's minds that the American Red Cross requested the removal of these and the substitution of the medical emblem of the O.C.D. The Red Cross found itself receiving not only undeserved credit for the organization and operation of first aid units, but also undeserved blame for failure to establish additional units in various localities where people felt they were needed. The stylized caduceus has accordingly replaced the red cross throughout the city. A tear may be shed, in passing, for one more flouting of historic and mythological tradition, by the use of Mercury's caduceus instead of Aesculapius' staff and serpent to designate medical activities as such.

Traveling during air raid alarms is forbidden to the general public, but essential for medical personnel; it has been necessary to provide doctors and nurses assigned to duty in first aid stations

* akamai—Hawaiian for clever, "smart", capable, expert, well-informed.

or hospitals with large passes which are inserted, when in use, into a celluloid pocket taped onto the windshield. Similar passes have been provided to permit the auxiliary emergency ambulances to travel during restricted hours. The permanent ambulances have been designated by a white square painted on the left front fender. Before these provisions were made, both medical personnel and ambulances repeatedly found themselves prohibited by police orders from moving at all during an air raid alarm. The present arrangements appear to be eminently satisfactory to all concerned.

Air raid shelter design is still in a state of flux. Covered shelters have proven difficult of construction because of lack of essential materials. Uncovered shelters, particularly the simple open trenches with which most schools have been provided, have developed an understandable tendency to fill with water, and in many instances the choice between facing an onslaught of possible bombs or rather probable pneumococci has been a difficult one. Corrugated iron roofing, were it only available in sufficient quantities, would be the ideal covering material, for it would protect not only the shelter against rain, but its occupants against falling antiaircraft shell fragments as well. However, an air raid shelter must have a roof of sorts; a wet ditch is a fine and even a comfortable place to be if bombs are falling all around, but it is a well-nigh impossible haven in which to squat for an hour or so of air raid alarm during which nothing happens.

The air raid wardens, who have already been saddled with a most extraordinary catalogue of duties and responsibilities, have now been given a streamlined course in first aid. The course has been outlined by Dr. H. S. Dickson, in the Emergency Medical and Ambulance Service office, and includes only the management of the more urgent varieties of injury. Perhaps it is unfair to include this as an example of unpreparedness; the organization of thousands of men for an undertaking of this sort could probably never have been accomplished without some such concrete evidence of its necessity as was provided for us on December 7th.

Unpreparedness from the standpoint of the lack of available hospital beds, mentioned in our last issue, has been receiving most constructive attention from the Army and the Office of Civilian Defense. The problem appears to be well on its way to solution, for present purposes at least.

NOTICE TO CONTRIBUTORS

Attention is directed to a few frequent errors in the preparation of manuscripts and reports submitted for publication in the JOURNAL. A Mainland periodical would probably just return many such papers to the author; here, time or other factors often require us to simply make the corrections ourselves. These are often very time-consuming, and please bear in mind that we are an unpaid staff working on the JOURNAL in our spare time. Your cooperation will save us a great deal of unnecessary work, and will be profoundly appreciated. The following rules are those most frequently broken:

1. Type manuscripts *double-space* (or triple space) on one side of the paper only, and send us the *original*, not a carbon copy.

2. Type *captions* for photographs, tables or charts on a *separate* sheet of paper, and number the photographs, etc., on the back, to correspond.

3. *References* must be double-spaced and must correspond to the A.M.A. form, as follows:

(1) Author's surname and initials, and a colon.
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(3) Name of periodical, abbreviated as in the Index Medicus, followed by no punctuation.
(4) Volume number, and a colon.
(5) Page number, followed by no punctuation.
(6) Month, in parentheses, and day of month if the periodical is a weekly.
(7) Year—and a period.

In references to texts, the *edition* number, the *place* of publication, the publisher's name and the *year* seem to be the most common omissions.

Please include only references you have looked up personally; any others should be accredited to their actual source, as having been "cited by" so-and-so, or included in a Yearbook, or otherwise abstracted.

Any physician interested in really preparing medical papers properly should by all means obtain a copy of Medical Writing: the Technic and the Art, by Morris Fishbein (Chicago, A. M. A. Press, 1938, price $2.00), and use it as a reference handbook: it is so full of specific, useful and valuable instructions and information that mere reading of it will by no means suffice. Lacking a copy of this invaluable book, we can only suggest that any copy of an A.M.A. periodical, such as the Journal, will serve as a reasonably adequate guide to proper forms of writing. A *little* more work at your end will save a great deal of work at ours. Thank you!

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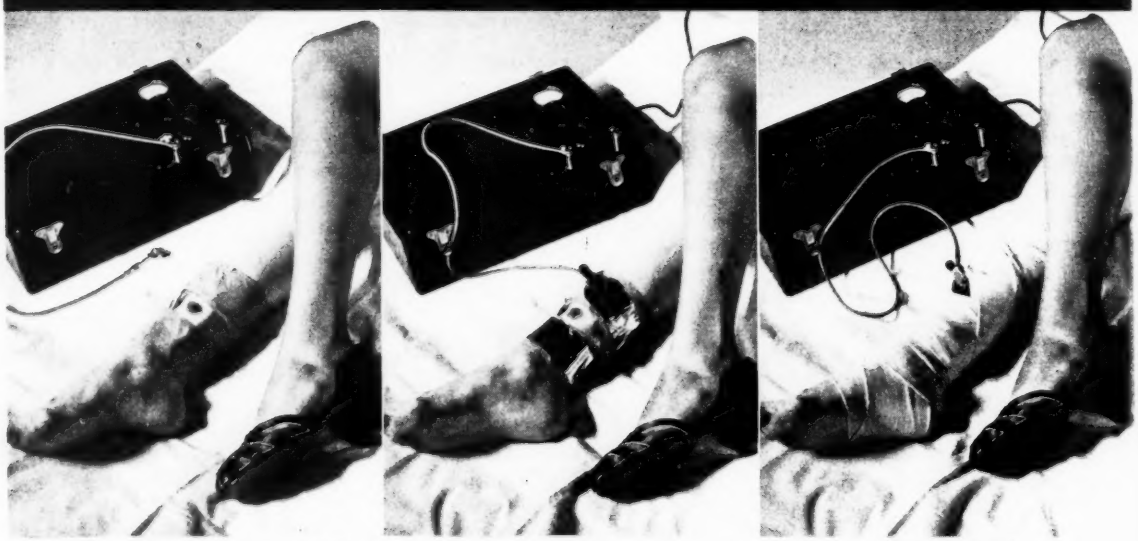

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PROGRESS IN INTERNAL MEDICINE

HYPERTENSION

The revival of interest in the renal causes of hypertension, awakened by Harry Goldblatt's work, has been maintained, and now seems to be leading to advances which have practical clinical importance to all practicing physicians.

In 1937 Dr. Goldblatt reported the experimental production of persistent hypertension in animals (dogs and monkeys) by constricting the main renal arteries. (Harry Goldblatt, Studies on Experimental Hypertension, V., The Pathogenesis of Experimental Hypertension due to Renal Ischemia, Ann. Int. Med. 11:69, July, 1937.) This reduces the blood flow to the functioning components of the kidney; *i.e.,* produces renal ischemia. Hypertension of varying degrees of severity, and with or without disturbance of renal function, could be produced by varying the degree of constriction of the renal arteries. There was thereby produced in experimental animals pathological states simulating benign and malignant hypertension in man.

This work was confirmed by a number of investigators. Page (I. H. Page, Production of Arterial Hypertension by Cellophane Perinephritis, J.A.M.A. 113:2046, Dec. 2, 1939) produced similar hypertension states in animals by wrapping the kidney in cellophane, leaving the renal pedicle free. This produces a peri-renal fibrosis, which constricts the renal parenchyma and apparently reduces its blood supply.

Further experiments convinced Goldblatt that the hypertension was due primarily not to a nervous but to a humoral mechanism, initiated by ischemia of the kidneys. The elucidation of the nature of this humoral mechanism has been occupying the attention of many investigators since this time. The literature on the subject is confusing in its magnitude, in its somewhat conflicting experimental results, and even in its terminology. Perhaps the best working hypothesis is that evolved by Corcoran and Page (Corcoran and Page, Arterial Hypertension—Correlation of Clinical and Experimental Observations, J.A.M.A. 116:690, Feb. 22, 1941.) *Renin**, a mixture of protein substances present in the cortex of normal kidneys, is liberated in increased amounts into the renal vein by the kidneys of dogs made hypertensive by renal ischemia. It requires for its vaso-constrictor or pressor action an enzyme-like substance present in normal plasma, *renin activator*. The interaction of these two liberates a third substance, *angiotonin,* which increases blood pressure by vasoconstriction and by increasing the force of the heart beat. Animals with normal kidneys develop tolerance to successive doses of angiotonin, but only to a slight degree if the kidneys are damaged or removed. This indicates that a substance is present in normal kidneys which inhibits the action of angiotonin. This inhibitor or *antipressor substance* has been extracted and used with some success in the control of hypertension in animals and in man.

Thus, in September 1941, I. H. Page and his associates (I. H. Page, O. M. Helmer, K. G. Kohlstaedt, G. F. Kempf, W. D. Grambill and R. D. Taylor, The Blood Pressure Reducing Property of Extracts of Kidneys in Hypertensive Patients and Animals, Ann. Int. Med. 15:347, Sept., 1941) reported the successful results of parenteral administration of kidney extract in experimentally hypertensive animals, and in patients suffering from essential and malignant hypertension. Patients with essential and malignant hypertension have been treated with good results for as long as a year. When injections were discontinued however, blood pressure tended to return to its former levels. Improvement in patients was manifested not only by reduction in blood pressure but also by decrease in heart size, and by improvement in ocular signs and in urinary findings. Unfortunately shock-like reactions occurred; furthermore, because of the lack of standard chemical procedures to yield a uniform product of high potency, the treatment cannot be considered a practical procedure at the present time.

Grollman and his associates (A. Grollman, J. R. Williams, Jr., and T. R. Harrison, Reduction of Elevated Blood Pressure by Administration of Renal Extracts, J.A.M.A. 115:1169, 1940)

*(This term was applied first by Tiegerstadt and Bergmann in 1898 to a pressor substance extracted from normal kidneys.)

have reported the use of a kidney extract both in experimental hypertensive animals and in man. This extract seems to be at least partially effective in reducing blood pressure when given orally as well as when administered parenterally.

Schroeder (Henry A. Schroeder, The Effect of Tyrosinase in Arterial Hypertension, Science 93:116, Jan. 31, 1941) reported that a pure preparation of tyrosinase, a phenolic oxidase obtained from mushrooms by Dr. J. M. Nelson, was used successfully in animals exhibiting ischemic renal hypertension. It inactivated angiotonin and also other pressor extracts and adrenalin. Administered by daily subcutaneous injection to patients with hypertension, it caused quite consistent lowering of both systolic and diastolic blood pressure, with alleviation of symptoms and favorable effects upon the course of the disease. The blood pressure returned to high levels within three to six days after injections were stopped, but symptomatic improvement persisted longer. Unfavorable effects included local painful and allergic reactions, pyrexia, and a persistent pigmentation at the site of injection.

These several reports suggest the probability that there will shortly become available some synthetic preparation or kidney extract which will be effective in controlling, at least in a measure, certain cases of so-called essential or malignant hypertension.

As a further practical application of Dr. Goldblatt's experimental work, writers have recently reported occasional cases of hypertension having unilateral kidney disease, which were treated surgically with success. Nesbit and Ratliff (R. M. Nesbit and R. K. Ratliff, Hypertension Associated with Unilateral Renal Disease, J.A.M.A., 116:194, Jan. 18, 1941) state that the three most common types of unilateral renal lesion associated with hypertension are those produced by gross occlusion of the renal arteries, including trauma to the kidney; the obstructive uropathies; and chronic inflammatory lesions.

Study of patients with unexplained hypertension should be made to determine the existence of unilateral disease of one of these types. Removal of the unilateral diseased kidney may result in marked improvement or cure. Proper chemotherapy in kidney infections may be a prophylactic measure of importance in preventing the occurrence of hypertension in other patients.

S. E. DOOLITTLE, M. D.

RECENT ADVANCES IN SURGERY

WAR WOUNDS OF EXTREMITIES INVOLVING BONE

During and after the Japanese attack on Pearl Harbor, we were given an opportunity to make observations on numerous war wounds, including many compound fractures. While for the most part our observations were not new, we were able to put into effect some of the ideas presented in current literature regarding the treatment of extensive lacerated wounds and fractures by the use of sulfonamides and immediate application of plaster casts.

Initial Treatment

The volume of patients received, and the crowding of the operating rooms, required many of the wounds and compound fractures to be treated in a small dressing room on the orthopedic ward.

The skin surrounding the wound was shaved and cleansed with soap and water. Ether was used to remove the oil which was found on many of the men. Debridement was performed under local anesthesia, using care to remove only truly devitalized tissue; no search was made for shell or bomb fragments, these being removed only when obvious and readily accessible. The wound margins were trimmed sufficiently to prevent overhanging and pocket formation.

The wounds were generously "salted" with sulfanilamide crystals from a salt shaker, and were then covered with a non-occlusive dressing: in our own station this was a thin layer of vaseline on gauze, lightly applied. No attempt was made to close the wounds initially, except in a few cases of incised wounds and a few others in which adhesive tape was used for partial approximation of tissues.

Three or four days later the wounds were dressed again; at this time they were found to contain a grayish slough which could be easily removed with tissue forceps. In many instances, when this was done, a shell fragment could be lifted from the wound. We believe that the gray slough is due to a cauterizing effect of hot metal, rather than to any chemical effect of the sulfanilamide. After removal of the slough the wounds had a red, healthy looking base. They were again "salted", dressed as before, and thereafter dressed as infrequently as possible.

The method of delayed suture was not used, once the patients had actually come to surgery, since it was our opinion that, after thorough debridement, primary closure was to be preferred. In most instances the treatment described above was employed initially, followed later by debridement with tight primary closure. It would appear from our results that the "golden period" of surgery has been extended from 6 to at least 72 hours, largely by the early use of the sulfonamides. As to selection of sulfonamide, we can confirm Long's dictum that sulfanilamide is the drug of choice, since we experienced caking of both sulfathiazole and sulfadiazine in wounds in which these drugs were used.

Plaster Casts

The method used in the treatment of fractures was essentially that of Orr, as modified in Spain and on other war fronts. Compound fractures were first treated in the manner described for lacerated wounds generally. Those which could be reduced were reduced and then placed in casts immediately, and the location of the wound, with a diagram of the fracture, was drawn on the cast with indelible pencil.

Many fractures were badly comminuted, especially those involving joints. These were treated by the use of Steinman pins or Kirschner wires incorporated in the cast. Others showed extensive bone loss in conjunction with large tissue defects. In cases with bone loss we attempted to maintain length in the hope that in some instances there might be enough periosteum left to regenerate the missing bone substance.

Both padded and unpadded casts were used, according to the nature of the wound. We feel that unpadded casts are better in those cases where no window need be cut for dressings. If a window is contemplated, a padded cast should be used since edema will produce less herniation of tissues through the site of the opening in such a cast. We prefer to leave the original cast in

place as long as possible without a window and without a change of dressing, except in case of a rising temperature or the development of unbearable odor, in which case an entire new cast is applied.

Using casts early as a means to secure physiological rest not only aids in the healing of lacerated wounds, but probably saves extremities which, treated by other means, might require secondary amputation. The cast permits elevation of the part and thus minimizes pain, swelling and congestion of the wound. It facilitates early transportation without danger of further injury to soft tissue by bone fragments.

Practically all fracture cases were evacuated to the mainland about 11 days after injury, and we have been informed that of 47 cases of compound fractures which reached one mainland hospital, only 2 had elevations of temperature above normal on arrival.

Conclusions

From our experience with war wounds we have concluded that the best method of handling these cases is (1) soap and water cleansing of the skin, (2) debridement, removing only devitalized tissue and eliminating pockets, and (3) generous application of sulfanilamide followed by a non-occlusive type of dressing. Physiological rest of the part is essential. It is best gained by a plaster cast, whether the lesion be a fracture or a lacerated wound. Dressings should be performed as infrequently as possible, since the danger of introducing infection from without outweighs any advantage that might be gained.

We believe that in time of stress traumatic wounds may safely be treated by use of sulfanilamide and a sterile dressing, with debridement (and primary suture) postponed for as long as 72 hours or perhaps even longer.

Sulfanilamide in crystalline form, which does not need to be sterilized and can be contained in an ordinary salt shaker, is the drug of choice, since it is readily absorbed and does not "cake" in wounds.

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CLINICO-PATHOLOGIC COMMENT

DONORS' CURIOSITY

50,000 blood donors may well ask 100,000 questions, which are succinctly answered by Fowler and Borer (*J.A.M.A.* 118:421 [Feb. 7] 1942). Donation of 555 cc. of blood causes an average drop of 2.3 Gm. hemoglobin (15% in Hawaiian male standard.) It takes about 50 days to replace this. Smaller losses regenerate earlier, and earlier in men than in women. Administration of iron shortens the regeneration time to 35 days.

Routine bleedings should be spaced at 3 months, unless controlled by hemoglobin estimations.

CLEAR CHOCOLATE AGAR

The favorite medium for growing meningococcus, influenza bacillus and particularly gonococcus (in an atmosphere enriched by CO_2) has for many years been chocolate agar. It is made by adding to a high grade agar, at about 80°, either whole blood or prepared hemoglobin. At that temperature, coagulation takes place, and the resultant medium looks like chocolate: hence its name. Bacterial growth is excellent, but with contaminants present, reading colonies, without the aid of dyes (or even with them) is difficult because of the opacity of the medium Now comes the happy thought from Steinberg and Mollor (*J. Lab. & Clin. Med.* 27:656 [Feb.] 1942) of enriching the agar with 0.1% soluble starch, adding the blood at 50°, bringing it then to 80°-85° for coagulation, briefly centrifuging the medium, and using the supernatant transparent portion for cultural work. They say that it is very well able to support the initial growth of meningococcus, influenza bacillus and gonococcus. It is being tried here in Hawaii, but the difficulty is that we have few or no B. influenza or meningococcus cases, and fresh cases of gonorrheal urethritis, in which the culture would be relatively pure, have also become scarce as hen's teeth. We have added p. amino-benzoic acid to the medium, in an effort to work with chronic cases, practically all of which have been under sulfa drug therapy before they become available to the laboratory.

PLASMA PRESERVATION

Plasma has played an important role in Hawaii recently—and may soon again—and it behooves all of "us Hawaiians" to look a bit more critically at the methods of preservation, and the fractions that are thereby preserved. (However, we must not forget what Col. Moorhead preached —"As an outcome of our round table discussions, we have decided that as a means of combating shock and hemorrhage, whole blood is the method of choice. If whole blood is unavailable, then plasma is the next best. In burns, plasma is to be preferred. We also give saline, with or without 5% glucose." *Hawaii Med. J.* 1:149 [Jan.] 1942)

Strumia and McGraw maintain that the simplest and best way to make and preserve plasma is to convert citrated blood, by a closed system in a minimum of time, into plasma, pool it to neutralize isohemolysins, and add merthiolate to a 1:10,000 concentration. This is followed by the prompt fixation of the plasma by freezing. It is then stored in the frozen state, in 250 or 300 cc. lots. This method prevents bacterial growth. When the plasma is rapidly melted at 37°, flocculation does not occur, and it may be given unfiltered. This method insures almost complete preservation of all specific elements: prothrombin, e.g., useful in hemorrhage, is preserved at a high level for 50 days or longer. Complement and antibodies are thus also preserved, so that this plasma has maximum usefulness. Plasma made and stored at room temperature is more apt to have contaminants grow. Labile constituents rapidly deteriorate. There is little or no flocculation but it should nevertheless be filtered before use. Its chief, almost its only, value is its protein content.

Plasma made and stored at 4° C—the usual method in Hawaii—preserves its labile constituents in fair quantity for 50 days, but flocculates rapidly. Filtration is essential and chance contaminants may grow.

Besides being indicated in shock (with or without hemorrhage), burns, hypoproteinemias, cerebral edema, and hemorrhagic diseases, plasma, preferably very freshly made, has been advocated

in infections, including the treatment of childhood exanthems.

We once said that we had never seen in the medical literature report of a case that had died of an overdose of plasma; Strumia and McGraw voice the same thought differently—"It may be stated that the amount of plasma usually administered, is smaller than the quantity necessary for best results."

So maybe the goal of 50,000 donors really isn't such a delusion of grandeur as it sounds.

BLOOD TRANSFUSION EN MASSE

While the virtues of plasma have been ably sung, it remains a fact that for hemorrhage, or hemorrhage plus shock, whole blood is still the choice. If we again have a very large number of high-explosive injuries within a short period of time, it is to be hoped that the Central Bank, or its subsidiaries, could supply ample quantities of whole blood, serologically negative and tested for blood group, either freshly drawn or preserved with glucose by the De Gowin method (28-30 days). The arrival at a hospital of a large number of injured and a large amount of whole blood would throw a heavy burden on the laboratory, which must work at top speed.

Each patient must be typed, and cross-matched with the blood of a selected flask; the latter should have, attached, a tube of its cell suspension. The laboratory should be prepared with a large number of tubes—Wassermann size—in a pair for each patient. One should contain about 5 cc. of saline, the other enough sodium citrate to prevent coagulation of 1 cc. of blood (0.1 cc. of 2% solution of sodium citrate evaporated to dryness). With the usual spring lancet, enough blood may be secured for typing and cross-matching, leaving the precious veins intact for transfusion. Two or three drops of blood in the saline tube are used for determining blood group, which takes about 5 minutes. Into the citrate tube, blood is milked to one half or one cc. There is no delay awaiting clotting; it can be immediately centrifuged, while the grouping is in progress. Blood group having been determined, the supernatant plasma may immediately be used in combination with the cell sample attached to the blood flask for cross-matching. Besides the saving of time, the method has the advantage that, since sodium citrate is anticomplimentary, agglutination is more accurately read, not being obscured by hemolysis.

All this is old stuff, but it may be advantageous to recall it under the present circumstances.

E. A. FENNEL, M. D.

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Division of Emergency Medical and Related Services

Territorial Office of Civilian Defense

The broad power delegated to the Governor under the provisions of special M-Day legislation authorizes the establishment and maintenance of essential hospital, medical, first aid, public health and other services which might be required for the civilian population during an emergency. Under this authorization the Division of Emergency Medical and Related Services was established in the Territorial Office of Civilian Defense on January 21, 1942. Dr. M. F. Haralson, Territorial Commissioner of Public Health, was appointed Administrator and was directed to organize the division to provide necessary medical and related services on a territorial-wide basis to function during the existing emergency.

It was clearly recognized that the organization of the division primarily was one of correlation and coordination of services which had already been developed. Existing organizations throughout the Territory under volunteer, private and official auspices had been developed which in a large measure made provision on a volunteer basis for the several services under emergency conditions.

On the island of Oahu, under the leadership of the Medical Preparedness Committee of the Honolulu County Medical Society, emergency medical, first aid and hospital programs had been inaugurated and developed. The Public Health Committee of the Honolulu Chamber of Commerce had established a blood and plasma bank and had provided a number of hospitals on the island with minimum equipment to enable them to supply plasma in time of emergency. In anticipation of the need, the City and County of Honolulu, through the Emergency Hospital, had stocked certain hospital and other medical supplies for possible use. The Board of Health had made provision for services of a public health nature and had obtained additional equipment, supplies, and biologics for emergency needs. On the outside islands the county medical societies had sponsored programs which were developed under appropriate committees with the cooperation of private agencies to provide similar essential emergency medical services. That the organizations on Oahu had been able to function efficiently and effectively was demonstrated under fire—during the enemy attack of December 7.

To coordinate and centralize these activities on a territorial-wide basis in the Office of Civilian Defense, it was proposed to organize the Division of Emergency Medical and Related Services, with two major subdivisions, one for the island of Oahu and one for the outside islands, each to be headed by an executive officer who would supervise and direct the several emergency services under the general direction of the Administrator.

Under the executive officer for Oahu it was proposed that the emergency hospitalization program, the blood and plasma bank, and the first aid and ambulance services would each be directed by a supervisor. For each outside island county it was proposed that a single supervisor would be responsible for the various emergency medical services, and he in turn would serve under the general supervision of the executive officer for the outside islands. In addition to the two major subdivisions, a medical supply officer was proposed who would be responsible for the procurement and distribution of emergency medical and hospital supplies.

In accordance with this plan, Dr. H. L. Arnold, Sr. has been appointed as executive officer for Oahu and has been delegated with the responsibility of administering services for the island. Drs. J. H. Linson, F. J. Pinkerton, and H. S. Dickson have been designated as supervisors of the hospitalization program, the blood and plasma bank, and the first aid and ambulance services, respectively. An executive officer for the outside islands has not yet been selected, but in accordance with the recommendations of the county medical societies, Dr. A. Orenstein has been appointed as the supervisor of all emergency medical services for the County of Hawaii, Dr. R. J. McArthur for Maui, and Dr. V. A. Harl for Kauai.

M. F. Haralson, M.D.

EMERGENCY HOSPITALS

The outstanding development in the medical civilian defense program since the last report has been the development of the emergency hospitals. The Wahiawa School is approaching completion of its conversion into a 300 bed hospital and the Sacred Hearts Academy is also almost ready for occupancy. It is proposed to have these two hospitals receive patients as soon as the equipment is adequate to care for them. The financial policy has not yet been published. The Manoa Japanese Language School is being converted into a hospital but will not be operated until and unless exigencies make it necessary. The expansion of the Shriners' Hospital likewise will not function unless conditions compel it.

This program was initiated by Dr. Thomas Mossman, with the assistance of Colonel Fronk, and most of the work so far has been planned by them. The responsibility has now been turned over to the Emergency Medical Services of the Office of Civilian Defense for finishing up this job so well planned and begun.

H. L. ARNOLD, SR., M.D.

AID STATIONS AND AMBULANCE SERVICE

The Emergency Medical and Ambulance Service continues the operation of sixteen aid stations in the City of Honolulu and three in the rural areas. Unit No. 1 (Demonstration Unit) is at present inactive, with supplies packed ready to move to any strategic point at a moment's notice.

The past two air raid alarms very effectively demonstrated the efficiency of our volunteer system. All units either had a considerable number of volunteers actually present, or the volunteers had reported by telephone and left word where they could be reached should necessity warrant their services. Reports are not as yet available on the Saturday, March 14, alarm.

The Maunalua Unit, under the direction of Dr. F. H. Gaudin, has placed three boxes of supplies at strategic points on the Kalanianaole Highway, to provide better service to the residents in that locality.

The Waialae Unit, under the direction of Dr. R. Wong, has set up a substation at the Kulamanu Studio on Aukai Street. This has been supplied with adequate equipment and staffed with volunteer personnel, and should be able to render considerable service to the residents of Kahala should an emergency arise. The ambulance service will be taken care of by the Waialae Unit.

The Wahiawa Unit, under the direction of Dr. Timothy Wee, has been allotted additional supplies and has set up twelve substations throughout the Wahiawa district. At the present time a training program is under way, under the capable direction of Mrs. McEldowney, and it is planned to utilize this trained personnel to staff the substations. This arrangement should adequately take care of the situation at Wahiawa.

At the present time plans are going forward for the placing of boxes of supplies at many points throughout other parts of rural Oahu. Supplies to be furnished are to be packed and placed so that they can be opened and utilized, if necessary, by even untrained personnel. Every effort will be made, however, to supplement this measure by making some trained personnel available.

All aid stations are being utilized by the authorities for community projects. So far, this work has not seriously interfered with the training program of the aid station personnel, and any proper requests for public service will continue to receive our utmost cooperation. Aid stations in the vicinity of, or attached to, public schools have been instructed to take care of minor injuries that occur during school hours.

A typhoid immunization and smallpox vaccination program has been carried out in the aid stations and the immunization of practically all the station personnel has been completed. The Kaahumanu Unit has undertaken in addition the immunization of approximately 200 volunteer ambulance drivers. The first immunization dose was given on Sunday, March 8, 1942. In cooperation with the Blood Bank, most of the aid station personnel and ambulance drivers, both regular and volunteer, have been blood typed. The practical experience thus gained by actual performance of such medical tasks should be of considerable benefit to the training program.

The Ambulance Service has now under its control seven specially built ambulances and fourteen converted cars that have been donated and deeded to the Office of Civilian Defense. While this is by no means adequate, the ambulances now enroute, together with the present setup of volunteer trucks, should adequately take care of transportation of injured individuals to aid stations and hospitals. The volunteer ambulances carry printed instructions conspicuously placed, instructing them where to report in the event of an air

raid. This system has been tested and is working smoothly.

It gives me great pleasure to state that in my opinion the Emergency Medical and Ambulance Service will function in a very able manner should a bombing raid place it in action.

H. S. DICKSON, M.D.

BLOOD AND PLASMA BANK

Progress Report

Typing and Serologic Testing. Up to March 1, 1942, approximately 8,000 persons had been typed. This figure includes the employes of 14 industrial organizations. All blood drawn has been examined serologically by the Wassermann, Kahn, Eagle or Kline test, depending on the varying availability of materials necessary for these various procedures.

Bleeding Donors and Processing Plasma. At present 10 units are at work daily on one or both of these tasks.

The total number of donors to date is approximately 5,300. Approximately 3,500 doses of plasma (250 cc. each) are in the bank ready for use. Approximately 1,000 additional doses have been dispensed to patients, making a total of 4,500 doses produced to date.

During the rush period immediately following the "blitz," approximately 42% of the output was contaminated. Of this amount all but about 30 liters has been decontaminated and reclaimed; continuation of the reclaiming process is dependent upon the procuring of five new filters.

All filtered and reclaimed plasma has been tested for toxicity on guinea pigs according to the prescribed methods for the production of biologics. 5,000 cc. of contaminated and reclaimed plasma has been given to human patients without ill effect.

Chemical analysis of reclaimed filtered plasma shows the following results:

Ingredient	*Before filtration*	*After filtration*	*Normal whole blood*
PROTEIN	5.8 Gm.	5.75 Gm.	6-8 Gm.
ALBUMIN	4.2	4.15	4.2-5.4
GLOBULIN*	1.6	1.6	1.6-3.2
CHOLESTEROL	152.00	151.00	140-200
	mgm./100 cc.	mgm./100 cc.	mgm./100 cc.
CHLORIDES	608.00	607.00	570-620
FIBRINOGEN	0.35	0.30	0.4

* by difference.

To stop some of the loose talk in connection with the Blood Bank, *there has been no loss to date of a single drop of plasma.* The contaminated plasma produced under pressure and adverse conditions has largely been reclaimed and made safe for use, and reclamation of the rest of it is in progress.

At the Central Bank the present rate of contamination is about 1%, which is much less than that reported from other similar projects. This low rate is made possible by trained personnel working under normal conditions with proper equipment and a completely closed system.

The medical profession and the public must realize that the plasma and whole blood in the Bank is to be saved for war and military emergencies, and while it is available for peace-time emergency civilian use, this is permitted only with the understanding that it be replaced by the proper number of donors, or paid for at a rate sufficient to purchase enough blood to replace it.

The foregoing is not intended as a complete report, but only as an informative bulletin and a progress report of the activities of the Blood and Plasma Bank.

F. J. PINKERTON, M.D.

KAUAI

A special committee, consisting of Drs. Wallis, Harl, Umaki and Boyden, met with OCD coordinator Fern at the Wilcox Hospital on February 28th to consider the administration of the federal appropriation of funds for Kauai's civilian defense.

At that time it was expected that from $100,000 to $300,000 would be available to Kauai and was to take care of civilian casualties only. Plans also were under way for the Army to use Kilauea, Wilcox, Mahelona and Waimea hospitals for the hospitalization of military casualties, the Army proposing to furnish beds, linens, nurses and orderlies.

The committee was unanimous in its opinion that every effort should be made to have the administration of the Kauai program given to Kauai with full authority and responsibility, and Dr. Brennecke was appointed with authority of the Kauai Medical Society to visit Dr. Haralson, Col. King and Col. Green in Honolulu to accomplish this.

The committee further was of the opinion that if civilian hospitals are used for the care of military personnel such hospitals should be financed by the military authorities.

Regarding plasma preparation, the committee did not approve the fee of $3.00 to the Wilcox Hospital for each blood donor. This matter to be taken up again after Dr. Brennecke investigates the Honolulu procedure. The suggestion that Dr. Ecklund be paid a fee for his services in connection with the emergency plasma work was also not approved.

WEBSTER BOYDEN, M.D.

NURSING ACTIVITIES UNDER THE OFFICE OF CIVILIAN DEFENSE

Because of the usual casual acceptance by doctors of the indispensable services of the nursing profession and their habit of making no comment upon their services except those classifiable as "detergent to caustic," no one made reference in the first "war" number of the Journal to the splendid work done by the nursing profession. Only the anonymous author of the Pearl Harbor article alluded to it in passing.

Mrs. David Y. Akana has, therefore, been asked to prepare a report of activities since her appointment on March 2nd as Supervisor of Nursing Activities for the O.C.D.

It is unbelievable how acute the nursing situation had become in the three short months since the war started and what new problems developed out of the civilian defense activities. First of all, there has been created a definite shortage of nursing power in the Territory, due to several factors. First-reserve Red Cross nurses were called to active duty, and in many instances these were women holding key positions in the civilian hospitals. With the evacuation of the military casualties to the mainland, a large number of civilian nurses were called upon for convoy duty, and many of these were not returned because transportation could not be provided for them. Wives of Army and Navy personnel have been evacuated or have accompanied their husbands upon transfer. The aid stations, formerly staffed by volunteers, have required the employment of 40 full-time nurses. Civilian nurses have been drawn on to staff the Army's provisional hospitals at St. Louis College, Kamehameha School, and the dispensaries of the industrial and defense projects' clinics. Assignments have been made impossible for those nurses who have children at home, due to the lack of domestic help formerly available.

The shortage of nurses thus created has been felt most keenly by the civilian hospitals. Queen's had a shortage of 35 nurses, Kapiolani 18, Leahi 8, Children's 8 and St. Francis 8. The needs of the newly converted Sacred Hearts and Wahiawa hospitals had to be faced. The number of nurses available for private duty shrank from 90 to 60 in one month. The actual increased load on the public health nurses, as well as the anticipated additional responsibilities to be placed on them as a result of the contemplated immunization program and evacuation plans, made additional workers among these necessary.

The Military Governor issued a "freeze" order, effective December 7, 1941, making it impossible for nurses to leave their present jobs, or the Territory, unless a substitute was available, or there was other good and sufficient reason for their release. It is not necessary to explain situations which naturally arose as a result of this action.

After a preliminary survey of existing conditions with the assistance of the superintendents of nurses of the various hospitals, the Hospital Association, the Bureau of Public Health Nursing, the Hawaii Chapter American Red Cross, and the Territorial Nurses' Association, with its Nursing Service Bureau, steps were taken as follows:

1) A program of recruitment was undertaken. Through newspaper and radio appeal on the mainland, it was attempted to call 150 nurses from all parts of the United States. A sum of $30,000 was set up by the O.C.D. to cover the transportation, overland and sea, for such nurses, and to pay the salaries of those recruits who would be designated for special work by the O.C.D. The help of nursing placement agencies on the West Coast, the East Coast and Chicago was enlisted for this purpose, and to date 101 recruitments have been made. The Commandant of the 12th Naval District has been most cooperative in giving transportation to these recruits.

2) A plan was outlined for cooperation between the Army and Navy and civilian nursing agencies governing the release and evacuation of civilian nurses, with definite agreement that transportation will not be granted any nurse without the knowledge of and a clearance from the Supervisor of Nursing Activities of the O.C.D. office.

3) Personal problems of nurses were considered with a view of helping to strengthen morale.

This progress could only be made by reason of the splendid cooperation given by the various organizations concerned, and it is, I believe, ample proof of the value of good organization during peace time.

Supervisor of Nursing Activities, O.C.D.
(Mrs.) David Y. Akana.

COUNTY SOCIETY REPORTS

KAUAI COUNTY MEDICAL SOCIETY

A luncheon meeting was held at the Lihue Hotel, January 14, 1942. All resident members were present. Major Leach and Major Wessling were guests.

There was no regular December meeting, and since that time Drs. Wade and Ecklund have been called to active duty from the Naval Reserve.

Because of the "blackout" and extra work of all members in preparedness activities, it was voted that future meetings be held bi-monthly and at noon, on second Wednesdays, special meetings being called as required.

The secretary was instructed to obtain the notes on lectures given by Dr. Moorhead during his December visit in Honolulu.*

Plasma preparation and storage was considered. Dr. Kuhns has been appointed to direct this work. The membership believed it advisable to continue the preparation of 250 cc. quantities to be diluted when used and to be stored in suitable refrigeration units at three or four different points on the island.

It was the opinion of the majority that the Red Cross arm bands should be used by all first aid and medical personnel. Some believed that graduate nurses should wear "RN" insignia and the doctors "MD".†

After further general discussion of various topics the meeting adjourned.

WEBSTER BOYDEN, M.D., reporting.

MAUI COUNTY MEDICAL SOCIETY

The regular meeting of the Maui County Medical Society (annual meeting) was held on February 16, 1942. The meeting was called to order by Dr. Anderson, Secretary.

Members present: Drs. K. Izumi, R. McArthur, E. Anderson, G. von Asch, E. Kushi, T. Kanda, W. Patterson, H. Seiler, K. Jones, William Osmers, A. Rothrock, G. Lightner, W. Dunn, and J. Sanders, guest.

Election of officers: The following were elected: Dr. R. J. McArthur, Wailuku, President; Dr. H. H. Seiler, Paia, Vice-President; Dr. William Osmers, Wailuku, Secretary-Treasurer.

The following were elected to membership in the Society: Dr. Lewis E. Shapiro, Pukoo, Molokai; Dr. William H. Wilkinson, Lanai City, Lanai; Dr. Douglas Murray, Paia, Maui; and Dr. Hawley H. Seiler, Paia, Maui.

The following receipts were entered and deposited with our checking account as of this date: Dr. Robert Benson, $20.00; Dr. William Patterson, $25.67.

Meeting Adjourned.

Meeting of the Board of Governors, March 2, 1942. Dr. McArthur presided. Present: Drs. Dunn, McArthur, Seiler, Osmers, Lightner and Kusunoki (guest).

It was suggested that instead of an annual meeting of all members of the Territorial Society for the year 1942 a meeting of only the House of Delegates and the Council be called and that if possible the Honolulu County Society hold its meeting at this time in order that visiting members from the other islands might be present to listen in at such discussions as might be of interest to members of the entire Territorial Association.

Dr. Lightner moved that, in the event such a meeting of the Council and Delegates is held in place of an annual meeting of the entire Association, the expenses of our Councillor and Delegate be paid by our Society. Seconded by Dr. Dunn and carried.

Meeting adjourned.

WILLIAM OSMERS, M.D., reporting.

† Note: Only official medical O.C.D. insignia are now permitted on arm bands for use by civilian medical or nursing personnel; the American Red Cross has withdrawn its arm bands from circulation.

* Editor's note: these have since been published, in the January issue of THE JOURNAL.

HAWAII COUNTY MEDICAL SOCIETY

Medical Society meetings have been held January 18th and February 14th, in the afternoons because of "black-out" restrictions and the difficulty of travelling after dark. These meetings had a better attendance than the majority of our previous meetings as the physicians have been vitally interested in the discussions and in the solution of problems of civilian medical defense. The civilian defense committee has done a great deal of work and has accomplished much in preparing to meet any emergency which may arise. Benefitting from the experience gained in Honolulu on December 7th, this committee has been able to intelligently organize a plan for this island should such an event happen to Hawaii.

Knowing that one man was going to be appointed to control all such activities, the society has recommended one of its members for the important post. Dr. A. Orenstein was the society's recommendation as the proper man for the job. Since he is well qualified, knows the problems of this island, and will have the full cooperation of all the physicians, his leadership should insure the maximum of efficient preparedness.

Because of the increase in venereal disease cases, the society has recommended a more vigorous control and check of such cases. Working in conjunction with the Board of Health and the military authorities, certain rules and regulations have been adopted to cope with the problem. In brief, these aim to discover the source of the infection; insure adequate treatment of cases found and compel necessary treatment, if need be, while in the infectious state; prevent travel of infectious cases from one district to another; have definite criteria for non-infectiousness of a case; and have all cases released only by the venereal disease clinic or other recognized governmental agency. It is felt that the problem can thus be better managed and controlled without working a hardship or interfering with any physician's practice.

On February 8, 1942 the Society met with Lt. Col. Woodruff of the Army and discussed at length the venereal disease problem. It was decided to refer this entire matter to a committee, which would report at the February 14 meeting of the Society. At this latter meeting the committee composed of Dr. Arimizu and Dr. C. L. Phillips rendered its report which was accepted with minor changes. The U. S. Army has approved this report and it now constitutes the rules by which members of our Society are to be guided in all venereal disease cases. The report is as follows:

Report of the Venereal Disease Committee

I. All cases of venereal disease must be reported immediately to the Board of Health. The source of infection and contacts must be diligently inquired into and also reported so that adequate measures may be taken to prevent the spread of the disease. (It would facilitate matters for the Board of Health if physicians would state whether the case is indigent or not.)

II. All cases suspected of spreading venereal disease or deliquent in treatment must be isolated.

III. When a case is considered non-infectious by the attending physician, final clearance can be given only by the Venereal Disease Clinic or other recognized governmental agencies.
Criteria for non-infectiousness:

1. Gonorrhea.

Males:

a. Freedom from discharge.

b. Clear urine, no shreds, or shreds negative for gonococci.

c. The pus expressed from the urethra must be negative for gonococci on two successive examinations at intervals of not less than forty-eight hours.

Females:

a. No infective vaginal discharge.

b. Two successive negative examinations for gonococci of the secretions of the urethra, vagina and of the cervix, with an interval of at least forty-eight hours.

2. Syphilis.

Cases of syphilis shall be regarded as communicable until under treatment all lesions of the skin or mucous membrane are completely healed and a competent clinical examination shows the absence of any area from which infectious matter can be disseminated.

IV. All smears, cultures and serologic tests shall be done at the Hilo Memorial Hospital or Board of Health laboratory. Physicians in the outlying districts may run their own tests if there are adequate laboratory facilities, but the final release must come from the Venereal Disease Clinic or other recognized governmental agencies.

V. All infectious cases in the outlying districts should be restricted to their respective districts until considered non-infectious by the attending physician. Final clearance must be obtained from the Venereal Disease Clinic or other recognized governmental agencies.

The 202nd monthly meeting of the Hawaii County Medical Society was called to order at 10:00 a.m., Sunday, January 18, 1942, at the Hilo Memorial Hospital. There were 23 members and 2 guests present.

Dr. Patterson reported that the Hawaii County issue of the Journal would be postponed to allow the next issue to be devoted to papers from the Honolulu physicians on their war experiences. He requested additional papers from the members for inclusion in the Hawaii County issue.

Dr. Keay read the minutes of the medical defense committee's previous meeting. A clarification of the committee's functions and responsibilities was requested. Major Mayfield stated that the Army was prepared to take care of its own casualties and that this committee should continue to function under W. H. Hill during the emergency. Major Mayfield also reported that the Hilo Red Cross has started to work on surgical dressings.

The application of Dr. Yamanoha for membership was approved by a vote of 16 to 2.

Dr. Sexton reported on his recent trip to Honolulu and made recommendations to meet an emergency such as occurred in Honolulu. He pointed out certain shortcomings, such as the lack of preparation for complete blacking out of Queen's Hospital; the confusion of outside workers in trying to assist during the emergency which caused difficulty in giving intravenous treatments or bedside care to casualties; the necessity for dividing the hospital into sections and classifying and sorting the casualties for these sections. He submitted an outline of suggestions and recommended that Hilo Hospital: 1) evacuate all possible cases from the hospital for home care; 2) appoint teams immediately and train assistants to work with each team; 3) invite Dr. Halford to Hawaii to demonstrate burn treatment technique; 4) obtain more sterile surgical dressings.

It was voted that Dr. Halford be invited to Hawaii to instruct us in burn and shock treatment, and to bring all possible supplies such as sulfadiazine solution and tablets.

Our guest, Colonel Smock, gave a short talk on the Army's position and what the Medical Corps was attempting to do.

Meeting adjourned at 11:30 a.m.

Edmund Tompkins, M.D., reporting.

The 203rd monthly meeting of the Hawaii County Medical Society was called to order on February 14th, 1942, at 3:00 P.M. at the Hilo Memorial Hospital. There were 23 members present.

Dr. Yamanoha's election to membership was ruled irregular and his application referred back to the Censorship Committee for further consideration.

A report of the medical defense committee was called for and Dr. Keay stated that at the present time although the committee had been functioning up to date, it did not know its position or standing for the future as there had been some talk of the appointment of a civilian medical director for the entire island. This appointment would come from Honolulu and probably be made by Dr. Haralson. Dr. Crawford felt that this Socity should have a word in choosing the person as full cooperation would be necessary from all physicians. He also reported that he had received a $5,000.00 allotment for the month of February for the medical civilian defense work, to date about $3,000.00 had been spent. Thus, our main difficulty has been solved—that of obtaining money to procure necessary materials and equipment. The status of the expenditure of this money is not exactly known until the return of W. H. Hill who is conferring in Honolulu at the present time. Dr. Phillips was against having paid physicians or paid first-aid workers if some other way could be found to accomplish the necessary work. Dr. Sexton stated that it appears as if one man were going to be appointed by the civilian authorities to be in command of all civilian casualties on the island, he proposed that we decide on a man to recommend as a society and suggested Dr. Orenstein. Dr. Crawford suggested that a meeting be called to discuss this question. In view of the supposed need for immediate action, however, the general feeling was that definite action be taken at this meeting. Dr. Rice moved, seconded by Dr. Phillips, that the Society recommend Dr. Orenstein to act as civilian medical director for Hawaii. The motion was passed, 12 yes and 8 no. Dr. Eklund stated that undoubtedly many of the negative votes cast were for Dr. Orenstein but against this way of doing it. Considerable discussion followed and it was moved by Dr. Roll and seconded by Dr. Phillips that a vote of confidence be taken for Dr. Orenstein. This motion was amended by Dr. Chang that all other absent members be contacted and informed of what has taken place and ask for an

expression of their confidence. This motion and amendment were passed unanimously.

As there seemed to be considerable dissatisfaction and discussion, it was moved by Dr. Sexton and seconded by Dr. Crawford that a special meeting be held Sunday, February 15th, for a reconsideration of the question, with all men being notified so that they would have a chance to vote. This was amended by Dr. Crawford, seconded by Dr. Patterson, that the secretary be instructed to contact each man and ask them to select a member as their choice to be head of the medical division of civilian defense and to so instruct the secretary. The man receiving the most votes was to be elected. Motion and amendment were passed.

Meeting adjourned at 5:30 P.M

EDMUND TOMPKINS, M.D., reporting.

HONOLULU COUNTY MEDICAL SOCIETY

Summary of meetings, January thru March 1942.

A change in procedure has been made necessary for the regular meetings of the Society due to blackout and difficulty of night driving. Instead of the general evening meeting on the first Friday of every month the society now meets weekly at 9:00 a.m. on Thursday mornings in the Mabel Smyth Building auditorium. It has been necessary since the Blitz to have the doctors assemble at frequent intervals to keep informed of current plans and procedures under the emergency program, and to enable them to act as a group in deciding questions of group policy. To facilitate this it was agreed to combine the regular Thursday morning clinics of the Queen's Hospital with the meetings of the society, the society taking the time from 9 to 9:30 for announcements, discussions, and necessary action in emergency issues as they arise, and Dr. Hirsch taking over thereafter for an hour for clinic presentations.

This has so far worked out very well and entirely to the satisfaction of the medical society, with an attendance of rarely less than 80 persons. A special committee of the Board of Governors meets every Wednesday morning to plan the proceedings of the Thursday morning meeting, and any matters any member wishes to bring up for consideration should be in this committee's hands before Wednesday.

The Board of Governors has continued to meet as before on the first Friday of the month, as prescribed by the by-laws, and at such other times as the business of the society requires it.

The society has endeavored wherever possible to set itself up as a distribution center for the convenience of the doctors. In this manner gas masks, passes, liquor permits and gasoline ration coupons have been handled.

The major concern of the society recently has been the program, proposed by the Army, of immunizing the entire island population against typhoid, paratyphoid, and smallpox. Immunization of the rural areas was carried out almost entirely by Board of Health personnel but when it came to the 200,000 population of the City of Honolulu the plan encountered an immense problem in medical personnel to carry it out. It was proposed to the society by Dr. Arnold, in his capacity as Director of the Emergency Medical & Allied Services of the O.C.D., that the public be given an opportunity to have these immunizations done by their private physicians wherever possible, prior to the date set for the mass immunization program, and it was also proposed, instead of a much higher rate set earlier in the year, that the society adopt a fee of $1.00 per injection. This was approved by the general membership at the Thursday morning meeting of March 5th.

At the meeting of March 18th the membership further accepted the recommendation of Dr. Arnold of $15. for an afternoon of four hours, to be paid doctors aiding the mass immunization program, starting March 30th. This action was won by a small majority despite a contrary recommendation made jointly by the Board of Governors and the Committee on Forms of Medical Practice, to the effect that doctors should be compensated at the rate of $10. per hour whether for mass immunization of employees in industrial plants, or the general population at aid stations during the immunization campaign.

The rate of $10. per hour for immunization in industrial and commercial plants was unanimously accepted by the membership.

A report is given regularly at the Thursday morning meetings by Dr. Enright of the Communicable Disease Bureau of the Board of Health on the current communicable disease status of the community. Considerable time has been given by him lately to the immunization program. He gave information on the intradermal technique and

dosage. He commented on the epidemic of "pink eye" in the western states, cautioning doctors to be on the lookout for it in defense workers coming to Hawaii. He reported, on March 26th, 53 positive cases of typhoid fever out of a possible 60, all from one school, and traced to a human carrier. Dr. Haralson asked that cases be hospitalized at the U. S. Army Provisional Hospital #2, at the Japanese Hospital.

The Board of Governors has been very vigilant and has exerted pressure in the matter of violations of the Medical Practice Act in an attempt to protect the community against unlicensed physicians; it has voiced objection to aid stations under the O.C.D. being used as obstetrical stations or practicing medicine, and has had the ready cooperation of Dr. Arnold in not allowing such practices to grow up; it has been perhaps unnecessarily insistent in asking clarification of the status of enemy aliens employed in aid stations, but this has resulted in a clarification of the status of Korean aliens as being non-enemy.

In anticipation of the renewal of contract between the H.M.S.A. and the medical society, some minor changes suggested by Mr. Bowman are under consideration by the Board of Governors, as well as a special contract for defense worker groups. Nothing definite is ready for report at this time.

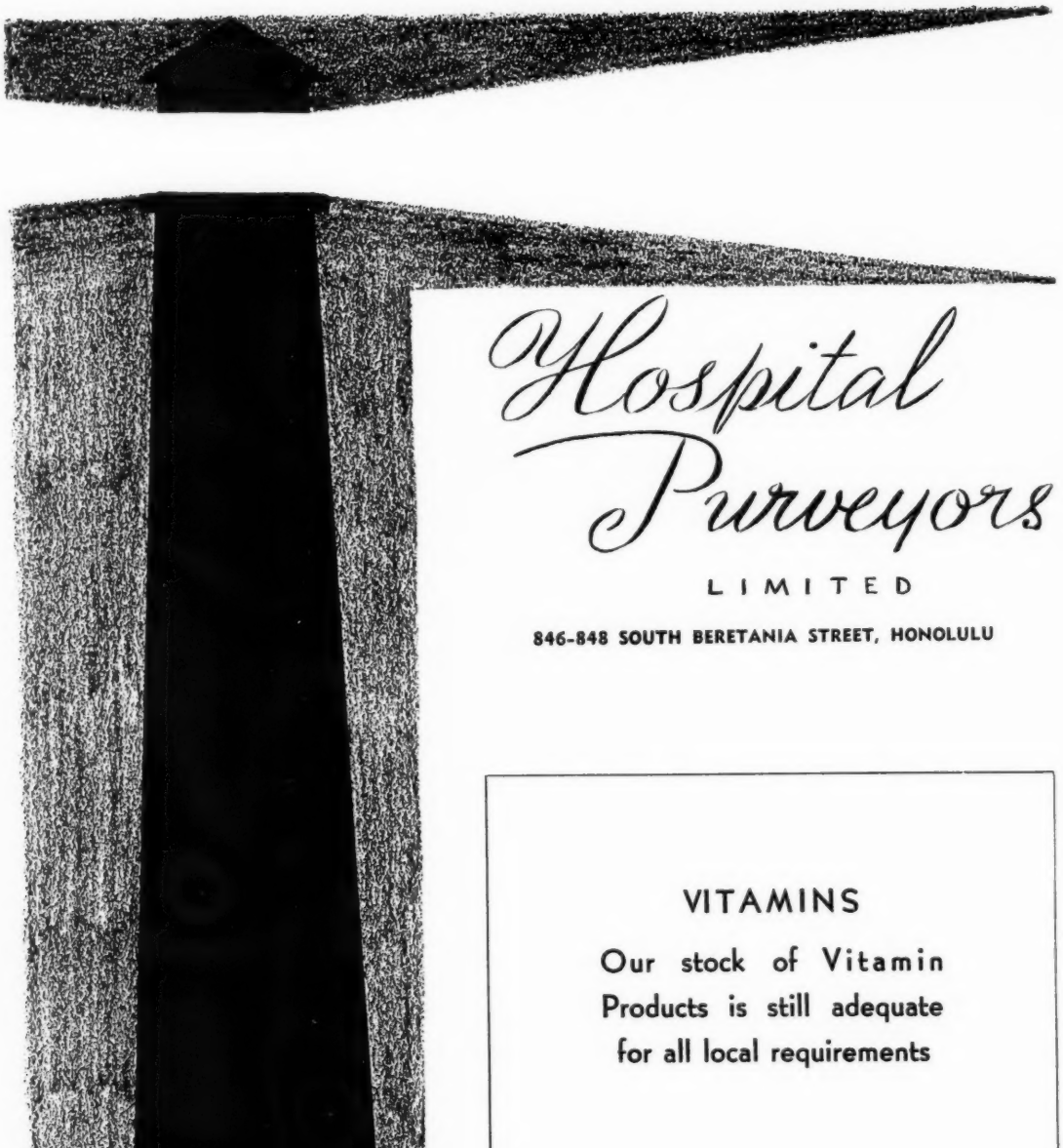
Charges that insurance companies were directing industrial accident cases to certain physicians caused the Board of Governors to appoint a special committee to investigate and make recommendations. This committee's report of March 5th is quoted here:

> The special committee composed of Drs. Strode, Chang, Bell, Molyneux, Pinkerton, was appointed by your President, Dr. Gaspar, to investigate charges from numerous patients and doctors that certain insurance companies were directing their insured industrial accident cases to certain individual doctors.
>
> Three meetings have been held and each member of the committee has taken upon himself certain investigative phases of the study. Several officers of the insurance company in question were interviewed and found to be most cooperative and willing to clarify an issue that appears to have happened without their knowledge or direction.
>
> Our findings indicate that in certain instances directors of personnel have without instruction or authority directed and demanded that ill or injured employees were to be sent to certain doctors not selected or desired by the employee. With this finding, the insurance company denied any responsibility. The insurance company advised your committee that when a policy is written by them for a group of employees, the completed policy is sent to the employer together with a roster of nine individual physicians or groups, the total of the nine selections being made up of some 30 individual physicians. It is maintained by the insurance company that this procedure does in fact give the employee a wide choice of physician in keeping with the intent of the act providing "free choice of physician."
>
> It appears to your committee that the irregularities reported have been the acts of self-appointed overzealous employers or personnel directors to steer patients in the direction of certain physicians and when such is done the same is without the sanction or direction of the insurance company. It also appears to your committee that this practice is widespread and common, and that we are officially without power to control such practice. We have, however, the assurance of the insurance company contacted that such practice is not their desire or wish and that they will take every possible step to prevent and stop such practice.
>
> Your committee, therefore, recommends that further inquiry in this direction be continued and that this committee report from time to time follow-up on the project which it was assigned to investigate.

Dr. Donald Marshall was appointed to the Territorial Nutrition Committee and Dr. Ernestine Hamre was given the endorsement of the Board of Governors in her appointment to the Advisory Committee of the Hawaii Chapter of the American Red Cross.

New members admitted into the Society were Dr. Robert H. Fishback who comes from Seattle to the Board of Health to supervise venereal disease work; Dr. Harry T. Hollman, who was formerly a member of the Society, and Dr. W. H. Requarth (Service Member), stationed at the Naval Hospital, Pearl Harbor.

Elizabeth D. Bolles, reporting.



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★

NOTES AND NEWS

Journal Issues

The next two issues of THE JOURNAL (May and July) will be the responsibility of the Maui County and the Kauai County Societies, respectively. The editor for each island—Dr. K. P. Jones for Maui and Dr. Samuel Wallis for Kauai—will be planning his society's number. Articles and news items should be submitted to him for acceptance *not later than the first of the month preceding the month of publication.* This does not restrict anyone from sending to the office of THE JOURNAL in Honolulu material and suggestions at any time. Local news of possible interest will be gratefully received.

To the Editor:

Dr. Moorhead states, "depressed fractures of the skull need nothing done immediately". In some simple depressed fractures, i.e. with no laceration of the overlying scalp, that are located in "silent" areas of the brain, this statement may be tenable. However, the majority of depressed fractures of the skull are compound wounds with laceration of scalp, dura and brain. These wounds, of all the wounds of the body, require *immediate* operation. Every minute lost before the wound is cleaned out and closed gives the bacteria just that much of a head start for the development of a meningitis.

"With foreign bodies", Dr. Moorhead says, "do not go in immediately unless there is some reason for it". This may be good advice for other parts of the body but not for the brain. When a metallic foreign body crashes through the skull it carries with it hair, dirt, and fragments of bone. The brain, in comparison to other tissues of the body, has little resistance to infection. It is therefore essential that these wounds be operated upon immediately and even if the foreign body itself is inaccessible, a thorough debridement of its path through the brain will prevent infection and hemorrhage.

In the matter of placing drains in wounds of the head—the general surgeon (Dr. Moorhead) advises their use, the neurosurgeon says NEVER, in a clean wound (i.e. one treated within 48 hours

NEW MEMBERS

Maui County:

WM. W. WILKINSON, Lanai City, Lanai.
LEWIS S. SHAPIRO, Pukoo, Molokai.
DOUGLAS MURRAY, Paia, Maui.
HAWLEY H. SEILER, Paia, Maui.

Honolulu County:

ROBERT H. FISHBACK, Bd. of Health, Honolulu
HARRY T. HOLLMAN, 1124 Miller St., Honolulu
W. H. REQUARTH, Service Member, Sub Base, P.H.

PERSONALS

DR. BRENNECKE has left Koloa to become director of medical affairs at Kekaha and Waimea, on Kauai.

DR. BECK left Kealia to replace DR. BRENNECKE at Koloa and, for the present at least, DR. SAM WALLIS has taken over DR. BECK'S work.

DR. BALFOUR is looking for an assistant to fill DR. MEYERS' place on May 1st when DR. MEYERS goes on active duty with the Navy. Details may be obtained from our Secretary.

If you have any medical journals six months to a year old that are gathering dust, will you notify Captain Corby at 67987. He is interested in distributing them to the medical officers stationed on the islands.

The films "First Aid Treatment in Fractures of the Lower Extremities", "Transportation of Fractures of the Extremities" and "Transportation of Fractures of the Spine" originally sent down on loan by Dr. Kellog Speed of Chicago, are now available indefinitely. On writing Dr. Speed requesting permission to hold them over for showings to fire wardens, police and first aid personnel, he hastened to reply: "Please keep them for use for instruction in the Hawaiian territory with my blessing and as a contribution to your defense efforts. May I hope that other medical societies may profit by them."

Recently an appeal went out to all new members and the few doctors who had not made a contribution to the Mabel Smyth Building fund, urging that they assist in clearing the small deficit of $3900 still hanging over our heads. DRS. S. MIYASAKI, LEON S. MERMOD, ROBERT T. WONG, ROBERT KATSUKI, RICHARD SIA, H. UCHIYAMA and ROBERT H. LEE made substantial contributions, for which those of us who must see this debt wiped out are most grateful.

DR. DAVID W. MORGAN who left the Mental Health Bureau to study with Dr. Ebaugh writes: "The very excellent format of the new HAWAII MEDICAL JOURNAL has finally come to our attention in Denver and we send many fond alohas for its success".

DR. PERRIN LONG, during his flying visit to Hawaii right after the Blitz, made a very pertinent suggestion: that wherever possible it be arranged to have surgical and other teams spend half a day in each of the hospitals into which they might be called upon to operate in time of emergency, getting a line on the set-up and the equipment available, meeting the supply officer, and in general getting acquainted with the place.

DR. CHARLES NEWTON, exchange obstetrical resident at Kapiolani Hospital since last June, left the Territory with his family the latter part of December. He was replaced temporarily by DR. E. G. EDGAR, U.S.N., who has just been relieved by DR. DANIEL KOBLI, U.S.N.

DR. R. T. TREADWELL of Kohala, Hawaii, was caught away from Hawaii when the war broke and is still in Oakland, California.

DR. WALTER F. MACKLIN has been called into service with the Army and is stationed at Tripler General Hospital.

DR. W. FULTON HUME, a recent member and for a short while associated with the Medical Group specializing in surgery, has gone on to the coast.

DR. ALFRED BURDEN has been called into the Army and has recently left for the Coast for a period of training.

DR. O. LEE SCHATTENBURG'S paper on "Ectopic Pregnancy in Hawaii", given before the 1939 Annual Meeting of the Territorial Medical Association, appeared in the October issue of the Western Journal of Surgery, Obstetrics and Gynecology. Dr. Schattenburg's paper given before the Dental Society Annual Meeting, "The Obstetrician Looks at Dentistry" has been accepted for early publication in the Journal of the American Dental Association.

DRS. DOUG. MURRAY, TOM COWAN, AL BURDEN and JIM FLEMING all from Maui are now in the service. DR. ANDERSON expects to be called soon.

Temporary moving of tuberculosis patients to homes and other hospitals because of the water situation gave Kula Sanitarium some excellent evacuation experience. All doctors were most cooperative in receiving patients. However, some bad results on patients have already been seen and more undoubtedly will be seen in the future.

CHAIRMAN LIGHTNER of the Blood Bank reports 330 units now on hand on Maui. A large amount of typing has been done.

As Winchell puts it—the SEILERS are "three-ing' soon.

The Maui Society extends sympathy to the McARTHURS on the loss of their baby boy by an acute lung infection.

DR. JOHN SANDERS, who has been doing survey work at Kula Sanitarium will be with the Paia Hospital in the future.

DR. STEELE STEWART has just arrived from Los Angeles to take over the Shriners' Hospital. In 1939 Dr. Stewart lectured to the Society here on orthopedics. He is a graduate of Penn., 1918.

after the injury). The only reason a drain is stuck in the wound is for the escape of blood—hemorrhage which has not been arrested. Of all the wounds of the body in which absolute hemostasis is essential, head wounds are among the most important. If the hemostasis is complete and the field dry, there is no need for a drain. It will only act as an open gate for infection to enter, and, if placed through the dura mater, for cerebrospinal fluid to escape. It is an unwritten axiom with neurosurgeons that no head wound should be closed until all bleeding points have been completely arrested, whether it takes 5 minutes or 5 hours. This is why we do not use drains.

Lastly, I am sure Dr. Moorhead did not intend to leave the impression he apparently did in regard to the closure of wounds of the face and head. He was so intent on putting over his method of "primo-secondary closure" of traumatic wounds that he neglected to stress the fact that this delayed method of wound closure *does not* apply to wounds above the neck, and should *never* be used. The rich vascular supply in the skin of the face and scalp is a protection against infection and is conducive to rapid healing. If the ragged edges of the wound are cut away and the clean sharp edges sutured tightly with two layers of fine silk, the wound will *heal completely* in three or four days without infection or scar. The use of a sulfa-drug powder is not necessary if the wound is carefully cleaned and debrided.

I was called in consultation recently to see a child who had received a head injury three days before. Upon removing the dressing I found a large gaping wound in the scalp of the forehead extending from the eyebrow to the hair line. The wound edges were ragged and irregular. Blood clots and sulfa-powder filled the wound. Four loose untied sutures extended from its edges, all ready to be "pulled together on the third day". I shuddered to think of the hideous scar on the little girl's face that would result from this method of treatment. I am sure Dr. Moorhead would not object to having his teachings clarified if this is an example of the false impressions he must have given in the treatment of head wounds.

Young Hotel Building
March 30, 1942

Communications

Messages commending the civilian medical profession of Honolulu for the part its members played in caring for persons wounded in the attack of December 7 have been received from a number of sources by the Honolulu County Medical Society. Apparently Col. John J. Moorhead

of New York City, who was addressing Honolulu physicians on war injuries at the Mabel Smyth Building when the attack was in progress, and who with local doctors responded to the call for professional help, has told the story of medical activities here before various groups of doctors on the Mainland, and his words prompted the messages.

The following is a cable message from George G. Orenstein, president of the New York University Medical Alumni Association:

HONOLULU MEDICAL SOCIETY
HONOLULU
WE HAVE JUST HEARD FROM COLONEL MOORHEAD OF THE SPLENDID WORK THAT WAS DONE BY THE CIVILIAN DOCTORS AT TRIPLER HOSPITAL DURING THE ATTACK ON PEARL HARBOR AND WE WANT YOU TO KNOW HOW PROUD AND APPRECIATIVE WE ARE
GEORGE G. ORNSTEIN PRESIDENT
NYU MEDICAL ALUMNI ASSOCIATION

The President of the New York Academy of Medicine writes as follows:

"The Fellows of the New York Academy of Medicine have recently had an opportunity of learning at first hand and in detail from Colonel John J. Moorhead of the remarkable piece of work that your organization did on December 7. The Council and Trustees of the Academy would like to acknowledge their great appreciation of this accomplishment. You have written something vastly worthwhile into the recent history of the medical profession."

From the professional staff of the North County Community Hospital of Glencove, N. Y., comes the following to the Honolulu profession:

"At a meeting of the North County Community Hospital, Glencove, N. Y., on March 9, 1942, addressed by Colonel John J. Moorhead of New York City, the following resolution was unanimously adopted by the professional staff of the hospital and ordered to be forwarded to your society:

"Resolved that the members of our staff wish to express through the Honolulu County Medical Society to the civilian physicians of Honolulu our deep appreciation of their skillful and untiring care of battle casualties among American seamen and soldiers on December 7. It is evident from the excellent results obtained that the care administered was prompt, painstaking, and marked by skill and good judgment."

DR. R. B. CLOWARD has the distinction of having the first article on war experiences in Hawaii appear in a mainland Journal. The January 24th issue of the A.M.A. carried his paper on "War Injuries of the Head," and a subsequent issue of Time commented extensively upon it.

DR. "PETE" HALFORD had a record attendance of doctors and nurses for his recent Sunday morning lecture on the treatment of burns.

DR. HAROLD SEXTON, house doctor at Queen's, and Miss Audrey Boyton of Oakland, California, were married on Sunday, March 15, at the home of his parents, Dr. and Mrs. L. Sexton in Hilo.

DR. ERNESTINE HAMRE spent two weeks on Hawaii at the request of Medical Preparedness Committee to give instructions in first aid. Three classes of instructions were held, meeting morning and afternoon. Each class met for three hours six times a week. 58 candidates completed the course. One advanced course was completed by ten students. The instructors' class was composed largely of men and women in active teaching positions, others had had teaching experience. Businessmen, nurses, police officers were well represented.

Good Hospital Care

The American College of Surgeons announces a new motion picture film produced by it in cooperation with the Petrolagar—16 mm, 2 reel, sound on film, time 25 minutes. It portrays scientific medicine and modern hospital care, and gives a brief outline of the growth and development of Hospital Standardization. Charge express both ways, plus $1.00 laboratory charge for checking and repairing film.

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January Issue Oversubscribed

Orders for the January issue of THE JOURNAL exceeded our provision of 500 extra copies by over 200. At this writing 400 additional copies are ready to fill these and other orders.

MAINLAND GROUP MEDICAL INSURANCE

Group medical insurance has been recognized by the majority of the state medical societies as a public necessity. Consequently, there is much activity among the various medical societies in providing such protection.

Having recently completed a business and pleasure trip through some thirty states, I have been interested by the differences in the plans that are operating. Oregon and Washington have perhaps the best-developed group medical care plans on the mainland. This is due, I believe, to two factors: (1) that the plans are being operated by the medical societies, and (2) that they have been in operation for many years and, therefore, have a long experience-rating on their groups. Detroit, Michigan, has the largest membership in the United States: over 350,000 industrial workers are insured by the Michigan Medical Plan, with some 4,000 physicians participating. Buffalo, New York, is operating a medical service sponsored by five local county medical societies. This plan is quite new and has a membership of about 5,000.

New York City has two medical plans sponsored by a large number of the doctors in that city. The plans have only recently begun operation, and it is difficult to say how they will progress. The big problem in New York City is that with so many doctors it is hard to get them organized. Washington, D. C., as many of you will remember, has a plan called Group Health, Inc. This service was the cause of a suit between Group Health, Inc., and the Washington Medical Society. This service employs about fourteen doctors and operates its own drug dispensary, injection room, first aid department, etc. Some 12,000 government employes are insured. Such a plan can be operated at slightly less cost than the other plans I visited. However, there are many disadvantages to such a set-up.

The California Physicians' Service seems to be doing a good piece of work in California. Some 6,000 physicians are participating. This plan has been in operation for three years and has more than 50,000 members.

In talking with the doctors and the lay managers of these plans I have come to the following conclusions: that each city or state must develop a plan that suits the particular needs of the employes; that the protection and monthly dues vary as to the type of industry; that the majority of these plans do not provide as complete a protection as the Hawaii Medical Service, though the monthly dues are much higher than ours; that the doctors are paid on a unit basis and in many plans are only paid forty to sixty cents on the dollar for service rendered; that the doctors everywhere have much more "red tape" than we do here in filling out various claim forms; that most plans have had difficulty with teachers and nurses, and many will not insure them; that mainland fee schedules are from twenty to forty percent lower than ours; that there is a definite awakening of the medical profession to the need for this type of care; that our basing the member's monthly dues on his income is a definite advance in medical insurance; that our service is running smoothly as compared with the mainland plans; that medical plans should be medically controlled with the assistance of industrial leaders; that most doctors believe that if these voluntary medical and hospital plans do not fulfill the public needs, something may be done by the government; that the medical societies should co-operate to the fullest extent, because medical insurance is basically sound and will survive, whether it be our co-operative medical plans or government medicine. The decision, I believe, rests with the medical profession.

W. M. BOWMAN, Manager, H.M.S.A.

The President
Hawaii Territorial Medical Association
Honolulu, Hawaii

Dear Doctor:

The members of the Hartford County Medical Association have just had the pleasure of an address by Dr. John J. Moorhead, Colonel, M.R.C., U.S. Army, on "Surgical Experiences at Pearl Harbor".

The speaker described the magnificent and patriotic service rendered by the members of your Society at the time of this unfortunate attack.

The excellent professional care which the injured and disabled received contributed materially to the marvelous results obtained.

May we offer our sincere congratulations.

Yours very truly, FRANK T. OBERG, Secretary